

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Poop, Bridge + ForecastlePort of Survey Hongkong

(Type of Superstructures.)

Date of Survey Aug. 22, 25, 26 + Sept. 2nd
1932.

Ship's Name

LIMNEA

Nationality and Port of Registry

British

Official Number

146141

Gross Tonnage

5698

Date of Build

192110 moName of Surveyor J. H. MorrisonMoulded Dimensions: Length 411.25 Breadth 53.08 Depth 31.0Moulded displacement at moulded draught = 85 per cent. of moulded depth 13128 tonsCoefficient of fineness for use with Tables .799Particulars of Classification +100 A 1
"Carrying petroleum in Bulk"
S.S. Sng No. 2-30

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	... 31.0	(a) Where D is greater than Table depth (D-Table depth) R =		Moulded Breadth (B)	53.08
Stringer plate	... 64. ... 05	(31.05 - 27.42) 3 = 1089		Standard Round of Beam = $\frac{B \times 12}{50}$	12.74
Sheathing on exposed deck	None	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Ship's Round of Beam	13.74
$T \left(\frac{L-S}{L} \right) =$		If restricted by superstructures		Difference	26
Depth for Freeboard (D) =	31.05			Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{26}{4} \times \frac{554}{559} = -0.4$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	109.00	109.00	7'-6"		109.00
" overhang ...	✓				
R.Q.D. enclosed ...	✓				
" overhang ...	✓				
Bridge enclosed ...	26.00	26.00	7'-6"		26.00
" overhang aft ...	✓				
" overhang forward ...	✓				
F'cle enclosed <u>Eggs</u> ...	42.54	42.54	7'-6"		42.54
" overhang ...	4.50	1.73	7'-6"		1.73
Trunk aft ...	✓				
" forward ...	✓				
Tonnage opening aft ...	✓				
" forward ...	✓				
Total ...	181.00	179.27			179.27

Standard Height of Superstructure 7.5

" " R.Q.D. ...

Deduction for complete superstructure 42Percentage covered $\frac{S}{L} = \frac{44.10}{100}$ " " $\frac{S_1}{L} = \frac{43.59}{100}$ " " $\frac{E}{L} = \frac{43.59}{100}$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required))

Percentage from Table, Line B. Tanker 34.59

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = $42 \times 34.59 = 14.53$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	51.12	1		51.12	49.00	48.00	1		48.00
$\frac{1}{8}L$ from A.P. ...	22.75	4		91.00	20.50	17.20	4		68.80
$\frac{2}{8}L$ " ...	5.62	2		11.24	4.00	5.50	2		1.00
Amidships ...		4			0	0	4		
$\frac{3}{8}L$ from F.P. ...	11.24	2		22.48	12.25	13.0	2		26.00
$\frac{4}{8}L$ " ...	46.50	4		182.00	43.00	41.2	4		164.80
F.P. ...	102.24	1		102.24	94.00	96	1		96.00
Total ...				460.08					404.60

Mean actual sheer aft = Defc
Mean standard sheer aftMean actual sheer forward = Defc
Mean standard sheer forwardLength of enclosed superstructure forward of amidships = Data not" " aft of " = applyCorrection = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) =$ $\frac{55.48}{18} \left(.75 - \frac{220.9}{200} \right) = +1.68$

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 = 31.05Summer freeboard = 5.785Moulded draught (d) = 25.320

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 6.33Addition for Winter North Atlantic Freeboard (if required) = 4.11

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta = 12660$

Tons per inch immersion at summer load water line

T = 44.42Deduction = $\frac{\Delta}{40T}$ inches= 7.127"

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{799+68}{136}$

Depth Correction ... 1089

Deduction for superstructures ... 1453

Sheer correction ... 1.63

Round of Beam correction ... 0.4

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = 68.8SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, W559, Steel, Deck:—Tropical Fresh Water Line above Centre of Disc ... 13 1/4"Fresh Water Line " " ... 7"Tropical Line " " ... 6 1/4"Winter Line below " " ... 6 1/4"Winter North Atlantic Line " " ... 10 1/4"Tropical Fresh Water Freeboard ... 4 7/8"Fresh Water " " ... 5 7/8"Tropical " " ... 5 2 1/2"Winter " " ... 6 3/4"Winter North Atlantic " " ... 6 3/4"

W559-0291 MARKING FORM

RECEIVED

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

Description of Hatchway	HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										on Forecastle Deck
	W.T.	2-OT	1-W.T.	2-OT	2-OT	4-OT	1-OT	4-OT	2-OT	1-W.T.	1-OT
Dimensions of Hatchway	7'x8'	6'x4'	3'2"x3'	6'2'7"	5'x4'	6'x2'6"	4'6"x3'	12'2"x6'	6'x2'6"	3'9"x2'6"	3'11"x2'6"
COAMINGS	Height above Deck	30"	9"	30"	9"	9"	8 1/2"	31"	31"	31"	16"
	Thickness Sides	44	9x3/2x50	7/20	9x3/2x50	9x3/2x50	8 1/2x3/2	3x3x4/20	3/20	3/20	7/20
	Stiffeners	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Brackets, Stays	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HATCH BEAMS	Number	None	None	None	None	None	None	None	None	None	None
	Spacing	None	None	None	None	None	None	None	None	None	None
	Scantling and Sketch	None	None	None	None	None	None	None	None	None	None
	Bearing Surface	None	None	None	None	None	None	None	None	None	None
FORE AND AFTERS	Number	None	None	None	None	None	None	None	None	None	None
	Spacing	None	None	None	None	None	None	None	None	None	None
	Unsupported Lengths	None	None	None	None	None	None	None	None	None	None
	Scantling and Sketch	None	None	None	None	None	None	None	None	None	None
HATCH COVERS	Material	Steel plate	Steel plate	Steel plate	Steel plate	Steel plate	Pine	Pine	Steel plate	Steel plate	Steel plate
	Thickness	40	60	11/20	60	60	2 1/2	2	7/20	7/20	7/20
	How fitted	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles	Efficiently stiffened and fitted with turnbuckles
	Bearing Surface	None	None	None	None	None	None	None	None	None	None
Spacing of Cleats	None	None	None	None	None	None	None	None	None	None	None
Number of Tarpaulins	None	None	None	None	None	None	None	None	None	None	None

*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

1-Hatch on Fiddle top to coal bunker:-
 13'7"x5'1", coaming 9x3/2x50 BA. Pine hatch cover 2 1/2" thick, fitted F+A. bearing surface 2 1/2", cleats spaced 29", two tarpaulins. ✓

Particulars of 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:-

None

Particulars of Companionways:-

One Companion on Poop enclosed by steel deck house leading to Poop space, door of steel 5'1"x2'0", sill 17", can be operated from both sides.

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

On Forecastle:-
 5-6" dia. coaming 36"x3/20 to Crew's quarters.
 4-8" " " 36"x3/20 to Fore Store.
 1-10" " " 36"x3/20 to Fore Store.
 On Bridge:-
 7-6" dia. coaming 9"x3/20 to store, fitted with screw down cover.
 On Fore Well:-
 2-16" dia. coaming 36"x3/20 to Fore Hold.
 1-12" " " 36"x3/20 to Fore Pump.

Pump House Top:-
 2-24" dia x 31" x 8/20 to Pump Room.
 All ventilators constructed in accordance with the Rules & closed with wood plugs & canvas covers where required.

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

On Forecastle:-
 1-6" dia. to F.P. tank, 24" high.
 2-6" " " to Fore deep tank, 17" high.
 On Fore Well:-
 2-3" dia. to Fore Cofferdam, 30" high.
 On Fore Well:-
 2-2" dia. to aft cofferdam, 4'1" high supported by bulwark brackets.

All air pipes of goose neck type, & closed with wood plugs & canvas covers & gauge wire for oil fuel where required. Sniffing holes at top of bend in air pipes 15" & less in height.

Particulars of Gangway Cargo and Coaling Ports:-

None

Particulars of Scuppers and Sanitary Discharge Pipes

All scuppers & sanitary discharge pipes are fitted with gunmetal storm valves at ship's side & efficient traps or wood plugs at inner ends.

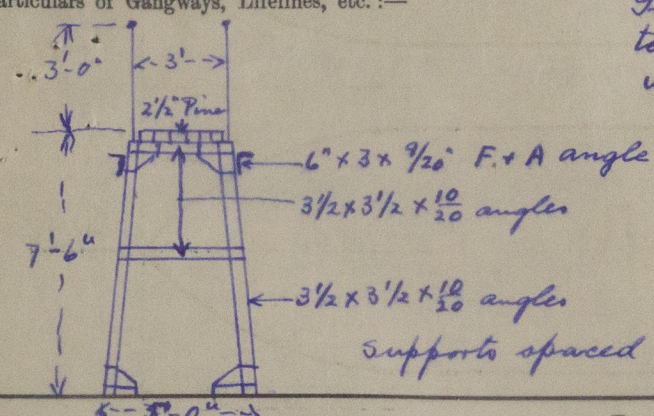
Particulars of Side Scuttles:-

Side scuttles in engine room store aft, 3" below line of freeboard deck amidships, fitted with hinged deadlights.
 Side scuttles in Poop, bridge & Forecastle fitted with hinged deadlights.
 all of substantial construction.

Particulars of Guard Rails:-

Guard rails 3'-3" high fitted on Poop, bridge & Forecastle, with stanchions spaced 4'-6" apart, 3 rods on Poop & bridge & 2 rods on forecastle.
 Bulwarks in wells 3'-6" high, strongly constructed.

Particulars of Gangways, Lifelines, etc.:-



Gangway fitted from poop to bridge & from bridge to Forecastle, efficiently supported, having stanchions with single wire rope rail 3'-0" high.

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	119.75' 120.5'	3'-6"	5'3/2"x2'-2" 3'-0"x1'3"	12 2	132.23	105.75
Forward Well	115.0' 110.5'	3'-6"	5'-0"x2'-2" 3'-0"x1'3"	11 2	114.80	96.50

State position of each freeing port (F. and A. position and height above deck edge):
 After Well:- 12"
 Forward Well:- 12"
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:-
 Small ports 3 vertical bars
 Large ports 2 Horizontal bars.
 Additional area where sheer is less than standard.

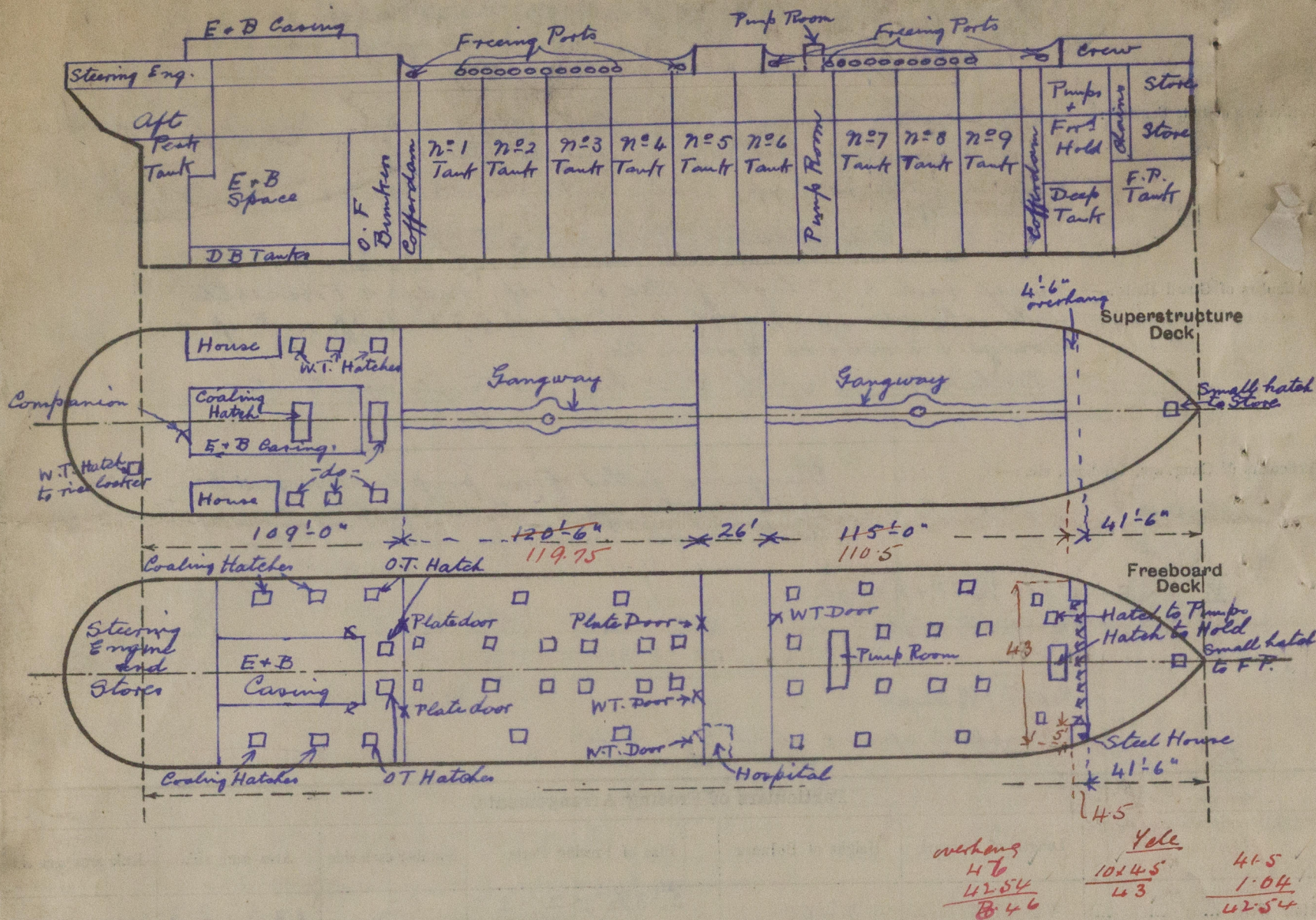
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	10/20	10/20	24 1/2" Vert. Wels 4" x 3 1/2" x 50 Horn. B.A.	30 1/2"	Brackets	4'-1" x 3'-0"	24"	7'-6"
Raised Quarter Deck Bulkhead	✓	✓	✓	✓	✓	✓	✓	✓
Bridge, After Bulkhead	8/20	6/20	4x3 1/2 x 8/20 angles	34"	Taken top & both angles	4'-1" x 2'-0"	24"	7'-6"
Bridge, Forward Bulkhead	10/20	6/20	6 1/2 x 3 1/4 x 1 1/2 angles	31"	Brackets	4'-11" x 3'-0"	18"	7'-6"
Forecastle Bulkhead	6/20	6/20	3x2 1/2 x 4/20 angles	29"	Taken top & both angles	5'-5" x 2'-1"	16"	7'-6"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Superstructure Decks	4/20	6/20	3x2 1/2 x 8/20 angles	33"	Taken top & both angles	4'-10" x 2'-2"	19"	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	7/20	6/20	13 1/4 x 7/20 Vert. Wels	9'4"	Brackets	3'-11" x 2'-0"	11"	7'-6"
Pump Room Deckhouse on Flush Deck Ships	6/20	6/20	4 1/2 x 3 x 8/20 angles	36"	Brackets	4'-8" x 2'-2"	17 1/2"	6'-8"

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

Poop Bulkhead	Portable plates, attached with hook bolts.
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	1-Hinged steel W.T. door, can be operated from both sides. 1-Portable plate, attached with hook bolts, can be operated from outside only.
Bridge, Forward Bulkhead	1-Hinged steel W.T. door, can be operated from outside only.
Forecastle Bulkhead	7-solid wood door, 1 3/4" thick, can be operated from both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓
Exposed Machinery Casings on Superstructure Decks	Hinged steel doors, can be operated from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Hinged steel doors, can be operated from both sides.
Deckhouses on Flush Deck Ships	Hinged steel W.T. door, can be operated from both sides.

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:— Oil Tanker, Longitudinal framing, Machinery aft.

Vessel surveyed in dry dock, Condition survey only.

Builder's name and yard number North of Ireland S.B. Co. Ltd, Londonderry.

Names of sister ships Solen, Spirella, Saxicava.

Owners Anglo-Saxon Petroleum Co. Ltd

Fee £ 410 00

Received by me



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