

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.Index. No. 35209A
(For London Office only.)

11 MAR 1937

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having

Poop & Bridge & Forecastle.

Port of Survey Hamburg/Kiel

(Type of Superstructures.)

Date of Survey 8th March, 1937.

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

"Henry Dundas"

British
London

165438

10,390

4-37

Name of Surveyor C. H. E. Preece.

Moulded Dimensions: Length 485-0' Breadth 69-75' Depth 37-0'

Moulded displacement at moulded draught = 85 per cent. of moulded depth 22950 tons

Coefficient of fineness for use with Tables 0.784.

Particulars of Classification 100A1

Petrol in Bulk, contempl.

Depth for Freeboard (D)

Moulded depth 37-0'

Stringer plate 0-07

Sheathing on exposed deck

$$T \left(\frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = 37-07

Depth correction

(a) Where D is greater than Table depth

$$(D - \text{Table depth}) R = (37.07 - 32.33) 3.00 = +14.22''$$

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

$$(\text{Table depth} - D) R =$$

If restricted by superstructures

Round of Beam correction

Moulded Breadth (B) 69.75'

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 16.74$$

Ship's Round of Beam normal = 16.75"

Difference Excess .01

Restricted to

$$\text{Correction} = \frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.01}{4} \times .6249 = \text{Nil}$$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	107.20'	107.20	8'-0"		107.20
„ overhang					
R.Q.D. enclosed					
„ overhang					
Bridge enclosed	39.37'	39.37	8'-0"		39.37
„ overhang aft					
„ overhang forward					
F'cle enclosed OPEN	35.33'	35.33	7.51'		35.33
„ overhang					
Trunk aft					
„ forward					
Tonnage opening aft					
„ „ forward					
Total	181.90	181.90			181.90

Standard Height of Superstructure 76"

„ „ R.Q.D. ✓

Deduction for complete superstructure 42.00

Percentage covered $\frac{S}{L} = 37.51$ „ $\frac{S_1}{L} = 37.51$ „ $\frac{E}{L} = 37.51$

Percentage from Table, Line A. TANKER 28.51

(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 = $42 \times .2851 = -11.97$

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P.	58.50	1		58.50	74.88	74.88	1		74.88
$\frac{1}{2}$ L from A.P.	26.03	4		104.12	35.76	35.76	4		143.04
$\frac{2}{3}$ L „	6.44	2		12.88	10.10	10.10	2		20.20
Amidships		4			0		4		
$\frac{2}{3}$ L from F.P.	12.88	2		25.76	15.12	15.12	2		30.24
$\frac{1}{2}$ L „	52.06	4		208.24	54.72	54.72	4		218.88
F.P.	117.00	1		117.00	118.62	118.62	1		118.62
Total				524.50					605.86

Mean actual sheer aft = Excess

Mean standard sheer aft

Mean actual sheer forward = Excess

Mean standard sheer forward

Length of enclosed superstructure forward of amidships = } Tanker.
L aft of „ = }

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{79.36}{18} \left(.75 - \frac{.1875}{56.25} \right) = -2.48$$

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 = 37.07

Summer freeboard = 7.35

Moulded draught (d) = 29.72

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = $7.43 = 7\frac{1}{2}$ "Addition for Winter North Atlantic Freeboard (if required) = $7.43 + 4.85 = 12.28 = 12\frac{1}{4}$ "

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$$\Delta = 21643 \text{ Tons.}$$

Tons per inch immersion at summer load water line

$$T = 70.6 \text{ Tons.}$$

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

$$= \frac{70.6}{40 \times 70.6} = 7\frac{3}{4}$$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.755 + .68}{1.36} = \frac{1.435}{1.36}$

Depth Correction 14.22

Deduction for superstructures 11.97

Sheer correction 2.48

Round of Beam correction

Correction for Thickness of Deck amidships

Other corrections, scantlings, etc.

Summer Freeboard = 88.31

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

Tropical Fresh Water Line above Centre of Disc 15 1/4"

Fresh Water Line „ „ 7 3/4"

Tropical Line „ „ 7 1/2"

Winter Line below „ „ 7 1/2"

Winter North Atlantic Line „ „ 12 1/4"

Tropical Fresh Water Freeboard 6'-1"

Fresh Water „ „ 6'-2 1/2"

Tropical „ „ 6'-8 3/4"

Winter „ „ 7'-11 3/4"

Winter North Atlantic „ „ 8'-4 1/2"

31 MAR 1937

25 MAR 1937

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	...	...	35 Oil Hatchw.	6 Bunker Hatchw.	7 Coffered Hatchw.	1 Cargo Hatchw.	2 Store Hatchw.		
Dimensions of Hatchway	...	...	7.0' x 4.0'	4.0' x 2.0'	23 1/2" dia.	19.95' x 10.17'	43' x 47 1/2'		
COAMINGS	Height above Deck	...	3 1/2' ✓	3 1/2' ✓	23 1/2" ✓	3 1/2' ✓	18" ✓		
	Thickness	Sides	.44 ✓	.44 ✓	.39 ✓	.44 ✓	.38 ✓		
	Stiffeners	...				7 x 3 x .46			
	Brackets, Stays	...				6 x .44			
HATCH BEAMS	Number	...							
	Spacing	...							
	Scantling and Sketch	...							
	Bearing Surface	...							
FORE AND AFTERS	Number	...							
	Spacing	...							
	Unsupported Lengths	...							
	Scantling* and Sketch	...							
	Bearing Surface	...							
HATCH COVERS	Material	...	Steel stiffened	Steel	Steel	Steel stiffened	Steel		
	Thickness	...	.50	.50	.40	.50	.40		
	How fitted	...	Hinged ✓	Hinged ✓	Hinged	Hinged ✓	Hinged ✓		
	Bearing Surface	...	Packing	Packing	Packing	Packing	Packing		
Spacing of Cleats	...	...	14 hing. Bolts	8 hing. Bolts	3 hing. Bolts	36 hing. Bolts	8 hing. Bolts		
Number of Tarpaulins	...	...	✓	✓	✓	✓	✓
*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 fiddle, funnel and ventilator coamings:—

Fiddley deck 5.20' above Pump-house.
 All openings and steel skylight closed
 by strong steel hinged covers.
 Funnel and Ventilator-coamings efficiently
 fitted to deck by riveted angles.

Particulars of Flush Bunker Scuttles:—

None. ✓

Particulars of Companionways:—

All Companionways situated inside superstructure.
 Pump-room-house & Companion strongly built of steel
 plates and angles as approved.
 One opening in each closed by strong hinged steel doors.

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

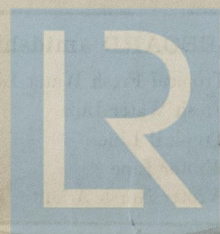
No Ventilators in exposed position on Freeboard-deck.
 Ventilators on Fiddle-deck, coamings 36" x .40.
 All Ventilators-coamings efficiently riveted to deck
 and fitted with screwing steel caps.

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

All Air-pipes are of substantial construction,
 of Rule height and fitted with Gauge and hinged
 steel covers.

Particulars of Gangway Cargo and Coaling Ports:—

None. ✓



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Lloyd's Register
 Foundation

Henry Dunda

Particulars of Scuppers and Sanitary Discharge Pipes —

8 Scuppers on each side above Freeboard-deck each 6"x3" and 5" dia in corners to Bridge & Poop.
All sanitary discharge-pipes are fitted with storm-valves.
Overboard scuppers from Poop space are fitted with storm-valves and screw-plugs from inside. ✓

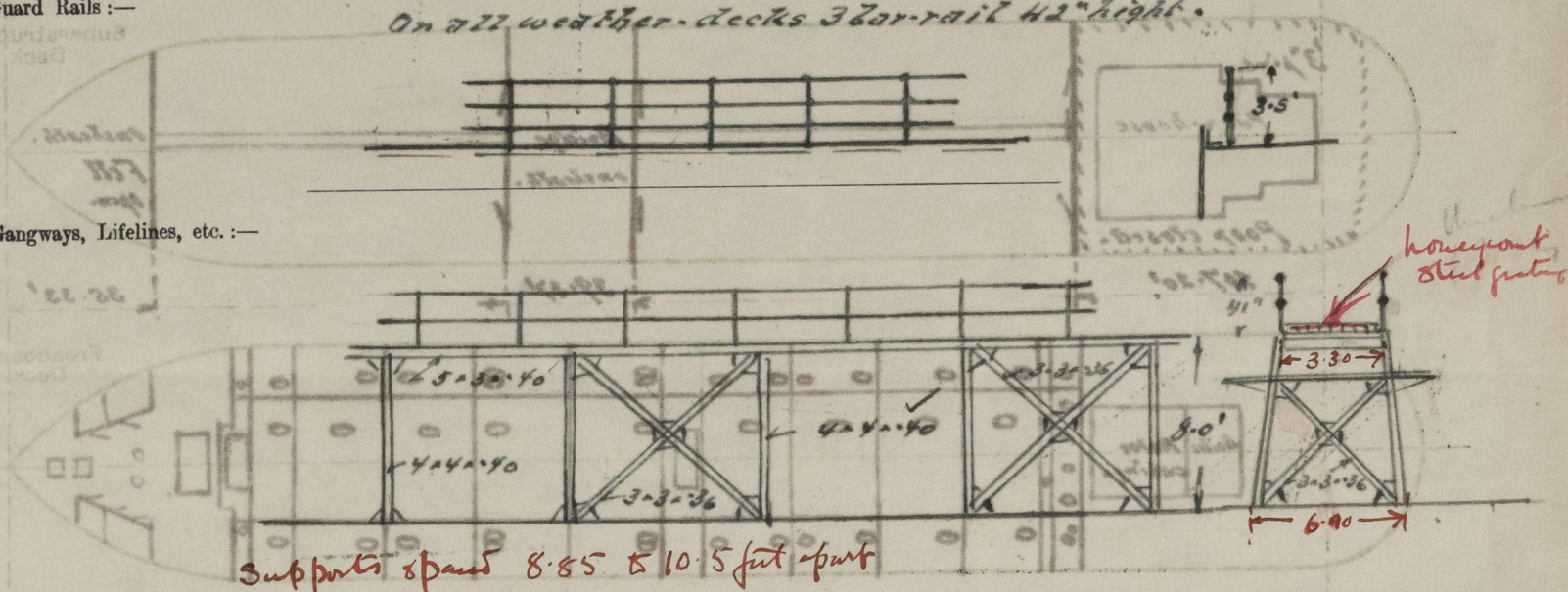
Particulars of Side Scuttles:

Side-scuttles in Poop space and Bridge space only.
All side-scuttles fitted with hinged dead-lights. ✓

Particulars of Guard Rails:—

On all weather-decks 3-bar-rail 42" high.

Particulars of Gangways, Lifelines, etc.:—



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			Open-Rail.			
Forward Well						

State position of each freeing port } After Well:—
(F. and A. position and height above deck edge) } Forward Well:—
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— ✓.

Additional area where sheer is less than standard. ✓.

Particulars of Superstructures, Trunks, Casings, Deckhouses.

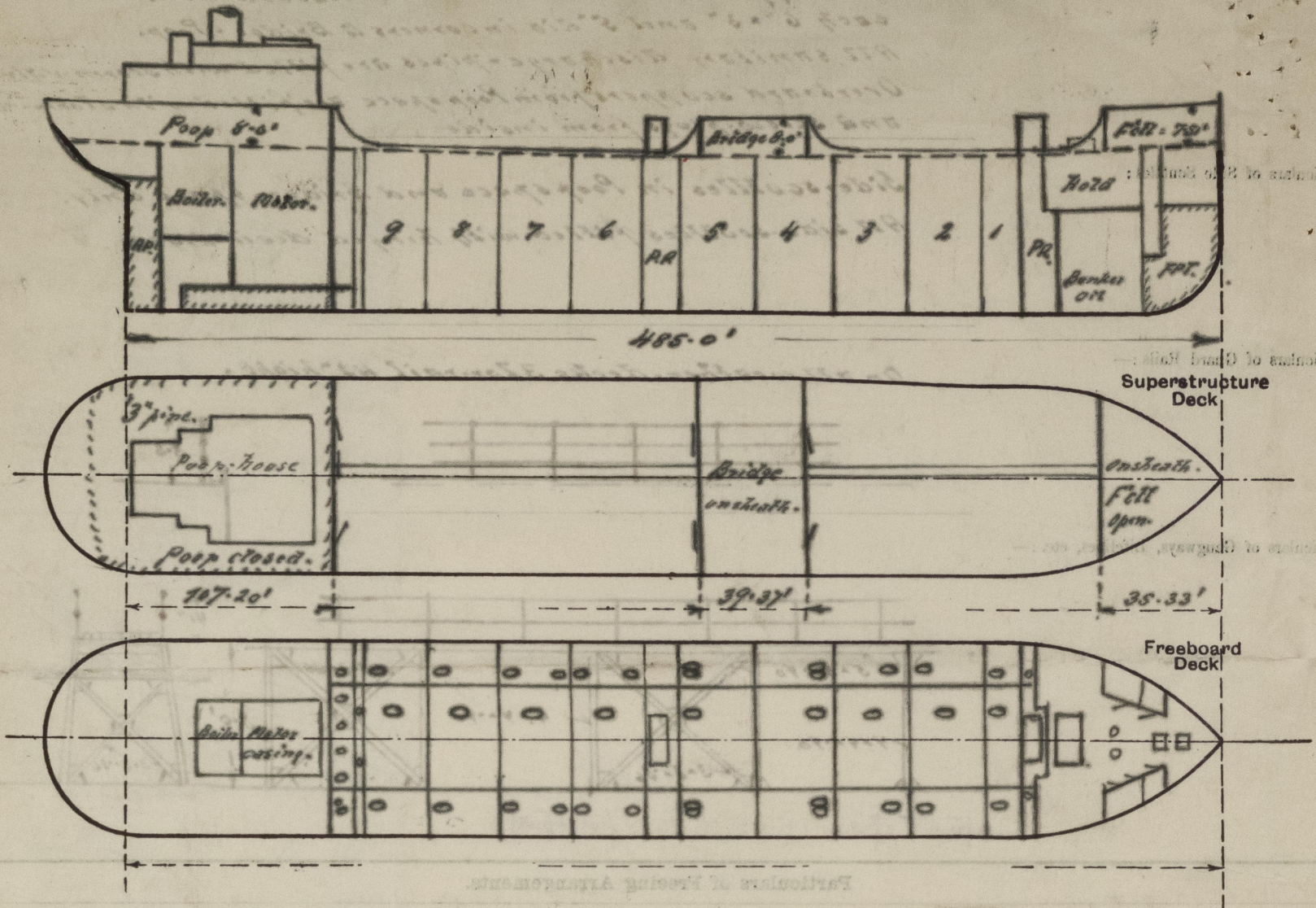
	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead ... ..	.50	.50	5 11/32 x .58	30"-32"	Brackets welded	2.59 3/4 x 28"	18"	8.0' ✓
Raised Quarter Deck Bulkhead ...						1.59 3/4 x 31 1/2"	24"	
Bridge, After Bulkhead ... ..	.52	.36	5 7/32 x .38	42"	Brackets welded	2.43 1/2 x 52 1/2"	24"	8.0' ✓
Bridge, Forward Bulkhead ... ..	.52	.50	5 10/32 x .50	42"	Brackets welded	2.60 x 28"	18"	8.0' ✓
Forecastle Bulkhead	1.6 x .44	.34	5 7/32 x .36	24" x 30"	welded.	5.61 x 28"	18"	7.51' ✓
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...								
Exposed Machinery Casings on Superstructure Decks	✓	.32	1 3/4 x .36	29 1/2"	Brackets.	✓	✓	5.2' ✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances								
Deckhouses on Flush Deck Ships ...	.48	.38	5 6/32 x .36	24"-30"	Brackets.	1.60 x 28"	18"	8.0' ✓

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

Poop Bulkhead	Two hinged steel doors with 6 Turnbuckles to be opened from both sides. One hinged steel plate with bolts 120 space packed. (Access hole) ✓
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	Two Tonnage openings, closed by stiffened steel plates with 12 hook bolts.
Bridge, Forward Bulkhead	Two hinged steel doors w.t. with 6 Turnbuckles to be opened from both sides.
Forecastle Bulkhead	None. Longit. Bldg. Starb. 3, port 2 steel wd. doors w. Turnbuckles from both sides.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Superstructure Decks	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships ...	None: One hinged w.t. steel door each, with Turnbuckles from both sides.

Henry Dundas

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:—

Tanker with two longit. Bulkheads and longit. Framing.

Particulars of Superstructure, Trunks, Deckhouses							
Location	Length	Height	Width	Area	Volume	Remarks	Notes
Forward Bulkhead	107'-20"	39'-37"	35'-33"				
Bridge							
Boiler							
Motor							
Deckhouse							
Trunk							
Deck							
Superstructure							
Freeboard Deck							

Builder's name and yard number *Fried. Krupp, Germania werft, Kiel, No. 567.*

Names of sister ships *"Narragansett" Fried. Krupp's No. 540. Buildings: Bremen, Voss & Rottsch. Bremerhaven.*

Owners *Oriental Tanker Co. of Hong Kong.*

Received by me *on completion.*