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(For London Office only.)

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having complete superstructure with tonnage opening aft.

Port of Survey Fredrikstad

Date of Survey 8th & 11th December 1936

Name of Surveyor Kude

Particulars of Classification 100A1, with freeboard strengthened for navigation in ice.

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"HERMA GORTON"	Swedish Helsingborg	8122	1827	1936

Moulded Dimensions: Length 91.44 m. Breadth 13.41 m. Depth 8.26 m. to superstructure deck.

Moulded displacement at moulded draught = 85 per cent. of moulded depth 4157 metric tons

Coefficient of fineness for use with Tables .668 (.68 minimum in tables)

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>5.820</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>✓</u>	Moulded Breadth (B) = <u>13.41 m</u>
Stringer plate ... <u>8 m/m</u> ... <u>.008</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>8.33(6.096 - 5.828) 23.09 = -52 m/m.</u>	Standard Round of Beam = $\frac{B \times 12}{50} = 268 \text{ m/m.}$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam <u>275 m/m.</u> <u>NIL.</u>
Depth for Freeboard (D) = <u>5.828</u>		Difference <u>deficient</u> = <u>268 m/m.</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{268}{4} \times .0087 = +1 \text{ m/m}$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S) m	Equivalent Enclosed Length (S ₁) m	Height m	Height Correction	Effective Length (E) m
Poop enclosed	<u>7.576</u>	<u>7.576</u>	<u>2.800</u>	<u>✓</u>	<u>7.576</u>
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed	<u>82.530</u>	<u>82.530</u>	<u>3.200</u>		<u>82.530</u>
" overhang aft					
" overhang forward					
F'ole enclosed					
" overhang					
Trunk aft					
" forward					
Tonnage opening aft	<u>1.334</u>	<u>.536</u>	<u>diff x .402</u>		<u>.536</u>
" forward					
Total	<u>91.440</u>	<u>90.642</u>			<u>90.642</u>

Standard Height of Superstructure 1983 m/m

" " R.Q.D. ✓

Deduction for complete superstructure 898 m/m.

Percentage covered $\frac{S}{L} = 100.00$

" " $\frac{S_1}{L} = 99.13$

" " $\frac{E}{L} = 99.13$

Percentage from Table, Line A. 98.93

(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 = 898 x .9893 = 888 m/m.

SHEER CORRECTION.

Station	Standard Ordinate m/m	S M	Product	Actual Ordinate m/m	Effective Ordinate	S M	Product
A.P.	<u>1016</u>	1	<u>1016</u>	<u>1037</u>	<u>1494</u>	1	<u>1494</u>
$\frac{1}{8}$ L from A.P.	<u>451</u>	4	<u>1804</u>	<u>370</u>	<u>665</u>	4	<u>2660</u>
$\frac{2}{8}$ L "	<u>113</u>	2	<u>226</u>	<u>86</u>	<u>164</u>	2	<u>328</u>
Amidships	-	4	-	0	-	4	-
$\frac{3}{8}$ L from F.P.	<u>226</u>	2	<u>452</u>	<u>169</u>	<u>286</u>	2	<u>572</u>
$\frac{4}{8}$ L "	<u>903</u>	4	<u>3612</u>	<u>768</u>	<u>1156</u>	4	<u>4624</u>
F.P.	<u>2031</u>	1	<u>2031</u>	<u>2141</u>	<u>2598</u>	1	<u>2598</u>
Total			<u>9141</u>				<u>12276</u>

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{3135}{18} (.75 - .50) = -43 \text{ m/m.}$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Mean actual sheer aft = Excess

Mean standard sheer aft = Excess

Mean actual sheer forward = Excess

Mean standard sheer forward = Excess

Length of enclosed superstructure forward of amidships = L

" " aft of " = L

Actual height of superstructure = 2.440 m

Standard " " " = 1.983

.457

= 457 m/m.

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	1102 m/m
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient <u>✓</u>	1102 m/m
Depth to Freeboard Deck = <u>5.828</u>	$\Delta = 5091 \text{ metric tons}$	Depth Correction	52
Summer freeboard = <u>.120</u>	Tons per $\frac{\Delta}{\text{immersion}}$ at summer load water line	Deduction for superstructures	888
Moulded draught (d) = <u>5.708</u>	T = <u>10.04</u>	Sheer correction	43
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48} \text{ inches} = 119 \text{ m/m}$	Deduction = $\frac{\Delta}{40 T} \text{ inches} = 124 \text{ m/m.}$	Round of Beam correction	1
Addition for Winter North Atlantic Freeboard (if required) = <u>119 + 50 = 169 m/m.</u>		Correction for Thickness of Deck amidships	-
		Other corrections, scantlings, etc.	-
			1 983 - 982 m/m
			Summer Freeboard = <u>120 m/m.</u>

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

Tropical Fresh Water Line above Centre of Disc	<u>194</u>	Tropical Fresh Water Freeboard	<u>minus 94</u>
Fresh Water Line " "	<u>127</u>	Fresh Water " "	<u>minus 4</u>
Tropical Line " "	<u>70</u>	Tropical " "	<u>50</u>
Winter Line below " "	<u>119</u>	Winter " "	<u>239</u>
Winter North Atlantic Line " "	<u>169</u>	Winter North Atlantic " "	<u>289</u>

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RECEIVED

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
← Superstructure deck →									
Description of Hatchway	Nº 1	Nº 2, 4	Nº 3	Hatch to store room right aft.	T.O. Hatch	Nº 1	Nº 2, 3	Nº 5	Escape Hatch
Dimensions of Hatchway	8.04 x 5.50	8.04 x 6.40	7.71 x 6.40	8.6 x 7.6	13.34 x 6.80	8.04 x 5.50	8.71 x 6.40	8.04 x 6.40	6.0 x 6.0
COAMINGS	Height above Deck	1100 mm	1100	1100	310	230 8a	230 8a	230 8a	230 mm
	Thickness	11	11	11	7	85 x 11	85 x 11	85 x 11	11 mm
	Sides	11	11	11	7	7	7	7	7
	Stiffeners	180 x 70 cl.	200 x 75 cl.	200 x 75 cl.	—	—	—	—	—
HATCH BEAMS	Number	5	5	5	—	—	—	—	—
	Spacing	1.34	1.34	1.285	—	—	—	—	—
	Scantling and Sketch	400 x 153	380 x 149	380 x 149	—	—	—	—	—
	Bearing Surface	75	75	75	—	—	—	—	—
FORE AND AFTERS	Number	—	—	—	—	—	—	—	—
	Spacing	—	—	—	—	—	—	—	—
	Unsupported Lengths	—	—	—	—	—	—	—	—
	Scantling and Sketch	—	—	—	—	—	—	—	—
HATCH COVERS	Material	wood	wood	wood	steel	wood	wood	wood	steel
	Thickness	64	64	64	7	60	60	60	10
	How fitted	F. ra.	F. ra.	F. ra.	Kinged	F. ra.	F. ra.	F. ra.	Kinged
	Bearing Surface	75	75	75	—	75	75	75	—
Spacing of Cleats	610	610	610	530	—	610	610	610	—
Number of Tarpaulins	2	2	2	—	2	1	1	1	—
*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/> Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/> Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/> Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/>									

Particulars of fiddle, funnel and ventilator coamings: — On boat deck strongly constructed. Fiddle openings have steel hinged covers.

Particulars of Flush Bunker Scuttles: — Two port & starboard amidships, 500 mm dia., screw joint, with chain attachment.

Particulars of Companionways: — From superstr. deck at f/cle h'd. leading down into f/cle space. Steel 1980 x 1000 x 1270, 8 mm thick. Opening 1520 x 830 mm. Steel hinged door 8 mm. sill 400 mm.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks: —
 Fore deck: Two 300 mm. x 1500 mm. x 8 mm. thick, supported & stiffened. — Two 475 mm. x 2500 mm. x 8 mm. supported & strengthened.
 Two 450 mm. x 10400 derrick ports. — Two 490 mm. x 4400 mm. x 8 mm. supported & stiffened.
 After deck: Two 475 mm. x 2500 mm. x 8 mm. supported & strengthened. — Two 500 mm. x 1500 mm. x 8 mm. supported & stiffened.
 Waist to main opening: one 405 mm. x 2250 x 8 mm. supported to tunnel; — one 228 mm. x 2630 x 8 mm. to A.P. to space, supported.
 One 300 x 2470 x 8 mm. to crew space, stiffened & supported. All have means of closing.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks: —
 Fore: One 75 mm. x 1260 mm. above d/c gooseneck. — In Comp. superstr. deck: Fore deck: one 65 mm. x 920 mm. port gooseneck.
 One 65 x 860 mm. P.S. gooseneck; one 75 x 860 mm. P.S. gooseneck; one 75 x 820 P.S. gooseneck; one 85 x 820 mm. P.S. gooseneck.
 Amidships: Two 75 x 820 mm. P.S. goosenecks; one 85 x 940 mm. P.S.; one 50 x 920 P.S. gooseneck; one 75 x 940 mm. P.S. gooseneck.
 Two 85 x 940 mm. P.S. goosenecks; one 60 x 940 P.S.; one 85 x 940 mm. P.S.
 Afterdeck: One 60 x 930 mm. P.S. gooseneck; three 75 x 800-820 P.S. goosenecks. — One 75 x 960 mm. aft d/c.
 All have means of closing.

Particulars of Gangway Cargo and Coaling Ports: —
 Ash shoot, 180 mm. dia., outside opening 750 mm. below freeboard deck, efficiently constructed.

Herma Gorthon

Herma Gorthon

Particulars of Scuppers and Sanitary Discharge Pipes —

Amidships: Sanitary discharges from spaces on superstr. deck on lower bridge: one P.S. from W.C. n. bd overboard 560 mm. above freeboard deck, fitted with storm valve. — Two P.S. drains from cabins, bd overboard 130 mm. below superstr. deck. — 1 port & 3 starboard, drains from galley, pantry, cabins n. bd overboard 150 mm. below superstr. deck. — 1 aft from deck house for crew: one discharge from W.C. bd overboard 260 mm. below freeboard deck, storm valve fitted. — Drains from washrooms, bd overboard 1500 mm. below superstr. deck. P.S.; no S.V.

Particulars of Side Scuttles: — All fitted with deadlights.

Particulars of Guard Rails: — Bulwarks fitted full length of superstructure deck, see below.

Particulars of Gangways, Lifelines, etc. —

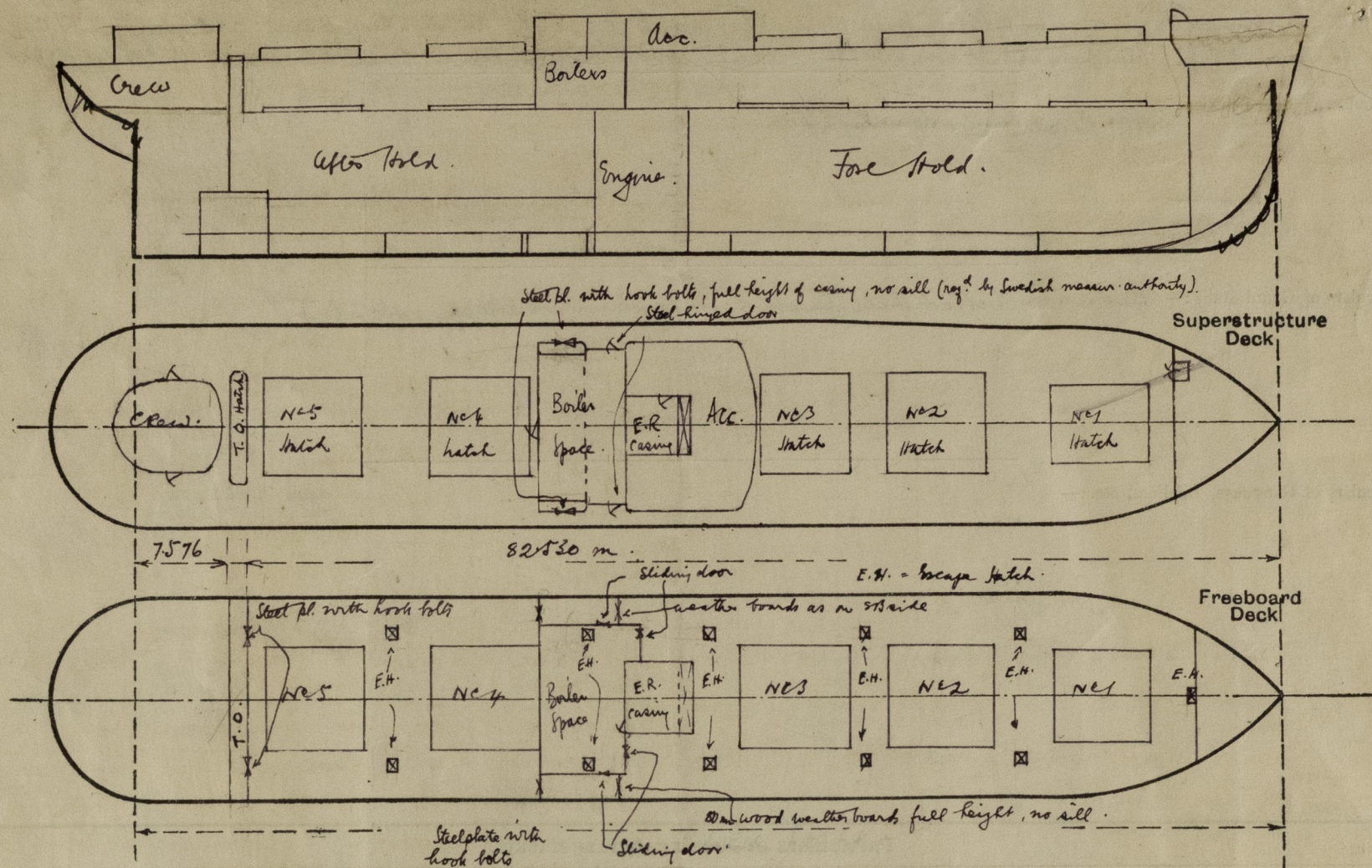
Particulars of Freeing Arrangements.						
	Length of Bulwark total	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	84.370 m	1000 mm	925 x 230 mm. 1.28 m x 2.44 m	7 } 1 }	1.8 1.44 sq. m. 1.44 sq. m.	1.948 sq. m. 2.58 sq. m. 4.528
Forward Well						
State position of each freeing port ... After Well: — Taken from casing aft end: — 8.1, 13.2 & 22.2 m (F. and A. position and height above deck edge) } Forward Well: taken from f/cle h'd: — 9.4, 16.0, 24.7 & 33.4 m. } 500 mm. above d/c edge. 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		7.5	100 x 65 x 8.5 angle E.W. I	760	Bracket top & bottom	—	—	3250
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead		6.5	100 x 75 x 8 angle E.W. I	710	Bracket at bottom	2970 x 925	none	3200
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks		7.5	90 x 65 x 8	540	✓	1430 x 564	470	2230 at side
Machinery Casings within Superstructures not fitted with Class I Closing Appliances		9.0	150 x 75 x 9.5 Bg.	670	Bracket at bottom	725 x 575	380	2460
Deckhouses on Flush Deck Ships								

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

Poop Bulkhead	None opening
Raised Quarter Deck Bulkhead	
Bridge, After Bulkhead	Steel plates, secured by hook bolts from T.O., sp. 320 mm.
Bridge, Forward Bulkhead	
Forecastle Bulkhead	
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	Steel hinged doors
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Sliding plate to bunker & to twin d/c space, worked from starboard. From B.C. to E.R. Steel hinged door. opening 1780 x 540, all 380 mm.
Deckhouses on Flush Deck Ships	Wood doors.

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:—



Tonnage Hatch

$$\frac{36.80 - 22.00}{36.80} = .402$$

State any special features in the construction of the ship:—

Tonnage opening aft. : Hatch 1334 x 6800 mm - Coaming 230 x 60 mm covers, resting on top of BA ✓
 One scupper, P. & S., with screw-down non-return valve (Spec. letter F. 1/10/36) ✓

The following particulars were obtained from the builders.

Draught.	Ext. displ.	Tons per inch (metr.)
18'-4" 5588 mm.	4819 m. ³	25
18'-6" 5639 "	4870 "	25.5
18'-8" 5689 "	4921 "	25.5
18'-10" 5740 "	4972 "	25.5

Builder's name and yard number. Fredrikstad Mek. Verktsted No 281

Names of sister ships. ✓

Owners Rederiaktiebolaget Gefion (Johan Gorthon, mgr.), Helsingborg

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