

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

12 NOV 1936

Computation of Freeboard for Steamer, Sailing Ship, Tanker
having Prop, Trunk and Forecastle.

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"RIGEL"	Swedish Helsingborg	8117	1015	1936

Moulded Dimensions: Length 60.635 m. Breadth 9.75 m. Depth 4.570 m.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1722.5 dm
Coefficient of fineness for use with Tables 0.75

Port of Survey Hamburg
Date of Survey 10th Nov. 1936
Name of Surveyor H. Goering
Particulars of Classification +100 A1
"Carrying Petroleum in bulk"
Strongly recommended for Navigation in ice.

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>4.57 m</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>8.33(4.580 - 4.042) × 15.31 = +69</u>	Moulded Breadth (B) <u>9.75 m.</u> Standard Round of Beam = $\frac{B \times 12}{50} = \frac{9.75 \times 12}{50} = 0.195$ Ship's Round of Beam = <u>0.195 m.</u> Difference = <u>Nil.</u>
Stringer plate <u>1.0 mm</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>538</u>	Restricted to Correction = $\frac{\text{Diff}^2}{4} \times (1 - \frac{S_1}{L}) = \text{Nil.}$
Sheathing on exposed deck T $\left(\frac{L-S}{L}\right) =$	If restricted by superstructures	
Depth for Freeboard (D) = <u>4.58</u>		

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	16.31 m	16.310	2.134 m	-	16.310
" overhang ...	none		+637 mm		
R.Q.D. enclosed ...	"				
" overhang ...	"				
Bridge enclosed...	"				
" overhang aft ...	"				
" overhang forward	"				
Fore enclosed ...	8.64 m	8.640	2.134 m	-	8.640
" overhang ...	none		+637 mm		
Trunk aft (PUMP ROOM)	1.528	1.528	2.134	-	1.528
" forward ...	18.220	18.220	2.134	-	18.220
Tonnage opening aft ...					
" forward					
Total ...	24.95	44.698			37.926

Standard Height of Superstructure	1830 mm
" " R.Q.D.	
Deduction for complete superstructure	658 mm
Percentage covered $\frac{S}{L} =$	41.15%
" " $\frac{S_1}{L} =$	73.72%
" " $\frac{E}{L} =$	62.55%
Percentage from Table, Line A.	50.33
(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 =	658 × 50.33 = 331 mm

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	759	1		759	825	825	1		825
$\frac{1}{6}L$ from A.P. ...	337	4		1348	355	355	4		1420
$\frac{2}{6}L$ " ...	845	2		169	95	95	2		190
Amidships ...	-	4		-	0	-	4		-
$\frac{3}{6}L$ from F.P. ...	169	2		338	170	170	2		340
$\frac{4}{6}L$ " ...	675	4		2700	665	665	4		2660
F.P. ...	1518	1		1518	1605	1605	1		1605
Total ...				6832					7040

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75 - \frac{S}{2L}}{18} \right) = \frac{208}{18} (75 - 2057) = -6$
If limited on account of midship superstructure. Yes. Nil.

Mean actual sheer aft = Even
Mean standard sheer aft = Even

Mean actual sheer forward = Even
Mean standard sheer forward = Even

Length of enclosed superstructure forward of amidships = Nil.
" " aft of " = Nil.

Deduction for Tropical Freeboard.
Addition for Winter and Winter North Atlantic Freeboard.

Depth to Freeboard Deck = 4.580
Summer freeboard = .351
Moulded draught (d) = 4.229

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{48}$ inches = 88 mm

Addition for Winter North Atlantic Freeboard (if required) = 88 + 50 = 138 mm

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 1947$ tons

Tons per inch immersion at summer load water line

T = 53

Deduction = $\frac{\Delta}{40 T}$ inches = 92 mm

TABULAR FREEBOARD corrected for Flush Deck (if required)
Correction for coefficient $\frac{75 + 68}{1.36} = \frac{1.43}{1.36}$

	+	-
Depth Correction ...	69	-
Deduction for superstructures ...	-	331
Sheer correction ...	-	-
Round of Beam correction ...	-	-
Correction for Thickness of Deck amidships ...	-	-
Other corrections, scantlings, etc. ...	-	-
	69	331

Summer Freeboard = 351 mm

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

CARGO	Tropical Fresh Water Line above Centre of Disc ...	Fresh Water Line " " ...	Tropical Line " " ...	Winter Line below " " ...	Winter North Atlantic Line " " ...
	180 mm	92 mm	88 mm	88 mm	138 mm

	+	-
Tropical Fresh Water Freeboard ...	171	-
Fresh Water " " ...	259	-
Tropical " " ...	263	-
Winter " " ...	439	-
Winter North Atlantic " " ...	489	-

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
ON TRUNK DECK. FREEB. DECK. ON FORECASTLE									
Description of Hatchway	...	...	8 OFF oil cargo heads	4 OFF COFFERD.	2 OFF OFFER COFFERD.	1 OFF TO STORE ROOM			
Dimensions of Hatchway	...	...	1140x760	400x400	400x600	800x800			
COAMINGS	{	Height above Deck	200 ^{mm}	250 ^{mm}	250 ^{mm}	125 ^{mm}			
		Thickness { Sides	12	10	10	10			
		{ Ends							
		Stiffeners							
		Brackets, Stays							
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	Steel	Steel	Steel			
		Thickness	12.5 ^{mm}	8 ^{mm}	8 ^{mm}	10 ^{mm}			
		How fitted	Keelp.	Keelp.	Keelp.	Keelp.			
		Bearing Surface	packing	packing	packing	packing			
Spacing of Cleats	...	...					
Number of Tarpaulins	...	...					
*Are wood fore and afters steel shod at all bearing surfaces?			none fitted						
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:— Fiddle top 940 and 1230^{mm} above wood deck on poop deck.
No openings in fiddle top.
Funnel and ventilator coamings efficiently fastened
No fiddle top.

Particulars of Flush Bunker Scuttles:—

none.

Particulars of Companionways:—

One companion on Forecastle deck to accommodation, closed by W.T. steel hinged door 700x1500^{mm}, sill 460^{mm} above bulkhead, capable of being manipulated from both sides.
One companion on Poop deck to accommodation, closed by W.T. steel hinged door 700x1500^{mm}, sill 400^{mm} above wood deck, capable of being manipulated from both sides.

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

On forecastle deck: two ventilators 250^{mm} diam to shore room; coaming 760^{mm} high, 8^{mm} thick.
On poop deck: two ventilators 200^{mm} diam to accommodation; coaming 760^{mm} high, 8^{mm} thick.
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Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—

Air pipe to fore peak tank 950^{mm} above forecastle deck.
Air pipe to after peak tank 950^{mm} above poop deck.
All air pipes are of substantial construction and closed by steel hinged cover with rubber packing.

Particulars of Gangway Cargo and Coaling Ports:—

none.

Particulars of Scuppers and Sanitary Discharge Pipes:—

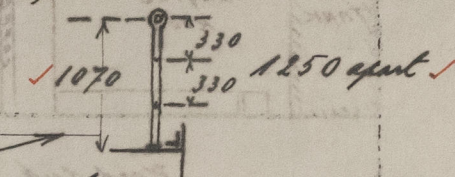
4 scuppers on each side above freeboard deck 125x100^{mm}.

All sanitary discharge pipes are fitted with storm valves.

The space on the forecastle deck between the poop front and the after bulkhead of the forecastle room is drained by scuppers sills of washport doors in this space is not higher than the sills of the forecastle room door.

Particulars of Side Scuttles:— No side scuttles fitted below freeboard deck.

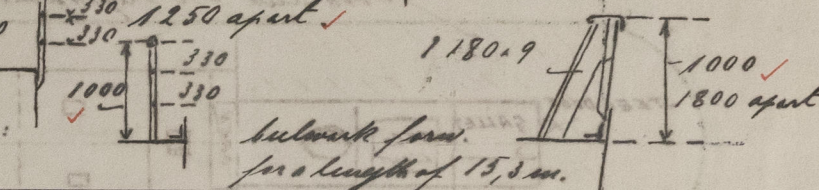
Side scuttles fitted in forecastle and poop space are of substantial construction and fitted with hinged dead lights.



Particulars of Guard Rails:— On forecastle deck and poop deck open rail.

On bulkhead deck open rail.

On freeboard deck open rail aft.



Particulars of Gangways, Lifelines, etc.:—

none fitted.

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						
Forward Well	15.2 m.	1000 ^{mm}	-	none	-	-
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.						

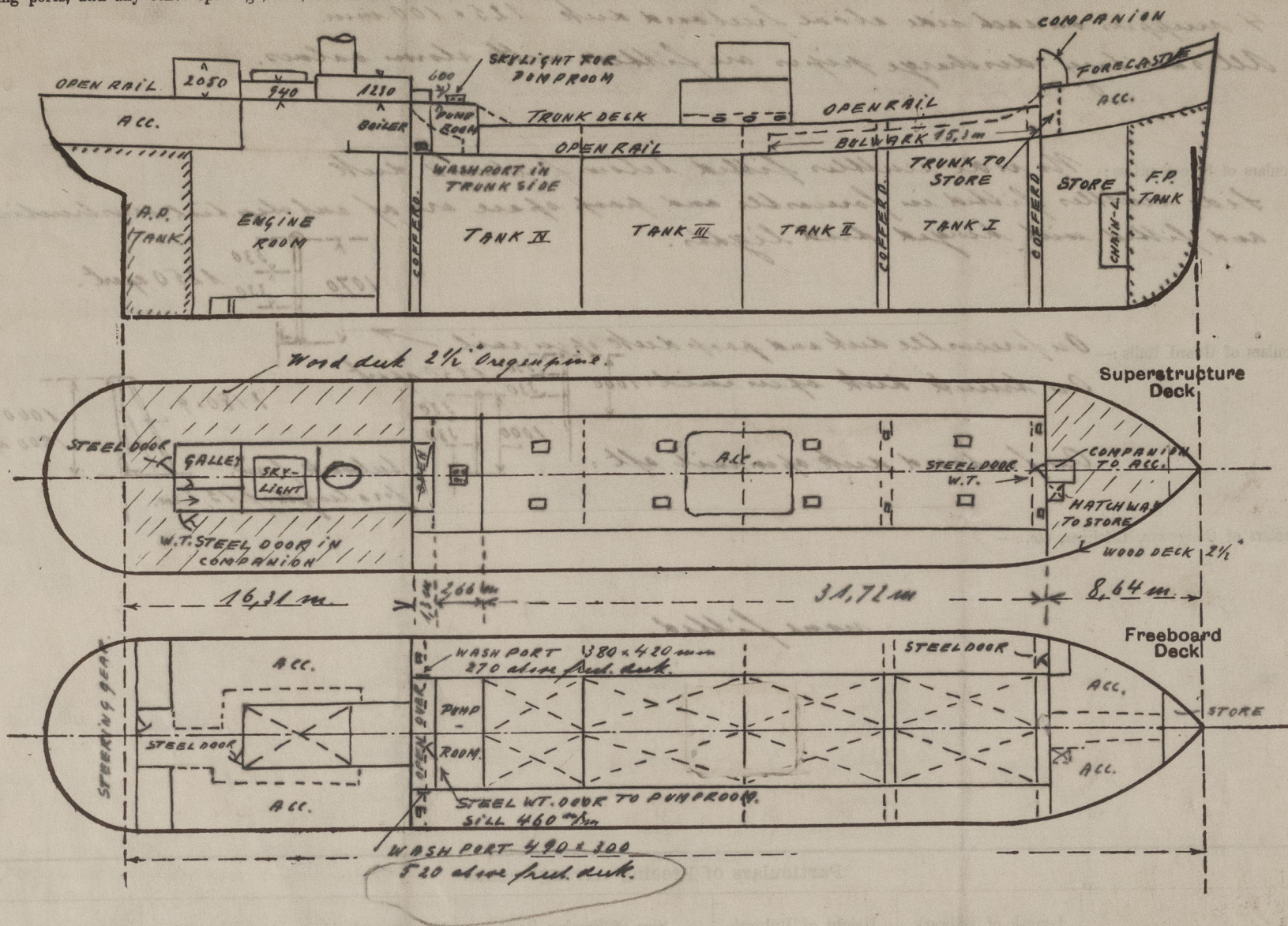
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	170.75 x 9 mm	8 mm	165.75 x 9	600-690	brackets top & bottom	none	-	2134
Raised Quarter Deck Bulkhead	-	-	-	-	-	-	-	-
Bridge, After Bulkhead	-	-	-	-	-	-	-	-
Bridge, Forward Bulkhead	-	-	-	-	-	-	-	-
Forecastle Bulkhead	170.75 x 9	6.5 mm	90.75 x 8	700	brackets top & bottom	600x1500	460	2134
Trunk, Aft	10 mm	9 mm	100.75 x 8	610	brackets top & bottom	700x1500	460	1150
Trunk, Forward	10 mm	9 mm	100.75 x 8	610	brackets top & bottom	-	-	1150
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	-	-	-	-	-	-	-	-
Exposed Machinery Casings on Superstructure Decks	75.75 x 7	7.5	65 x 90.75 x 8	610	brackets top & bottom	700x1500	460	1150
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	-	-	-	-	-	-	-	-
Deckhouses on Flush Deck Ships	-	-	-	-	-	-	-	-

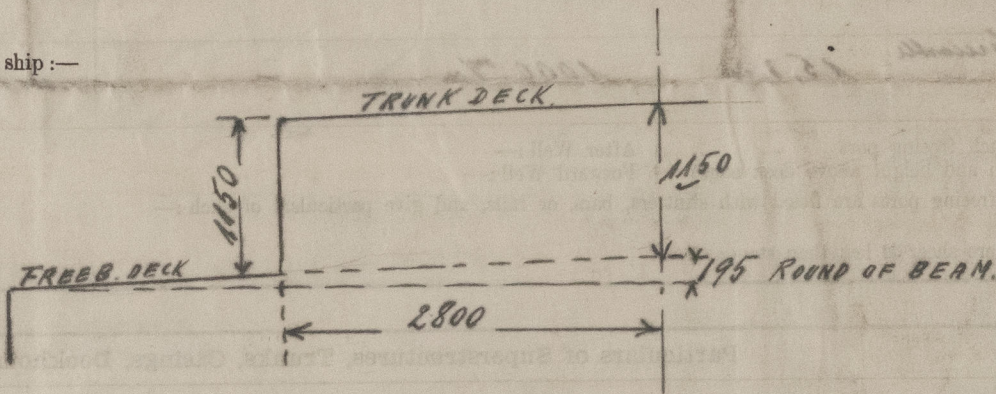
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	No opening
Raised Quarter Deck Bulkhead	-
Bridge, After Bulkhead	-
Bridge, Forward Bulkhead	-
Forecastle Bulkhead	One steel hinged door to W.C. closed by lock and key only.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	One W.T. steel hinged door in companion, capable of being closed from both sides.
Exposed Machinery Casings on Superstructure Decks	-
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	One W.T. steel hinged door in companion, capable of being closed from both sides.
Deckhouses on Flush Deck Ships	-

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:—



This vessel has been surveyed during construction on stocks and afloat.

Displacement in salt water at 3.30m draught = 1453 tons
" " " " 3.60m " = 1607 "
" " " " 3.91m " = 1765 "

Builder's name and yard number

Deutsche Werft A. G. Hamburg; Yard No. 176.

Names of sister ships

none

Owners

Trelleborgs Angfartygs Nya Aktiebolag

Fee £

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