

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

WRECK RAY

174-3

33944

Index. No.

(For London Office only.)

15 JUN 1932

N° 100562.

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~
 having Poop, Bridge & Forecastle

(Type of Superstructures.)

Ship's Name SVEABORG.	Nationality and Port of Registry Swedish. Stockholm.	Official Number 4700	Gross Tonnage 90765	Date of Build 1931-2
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Moulded Dimensions: Length 470-0 Breadth 64-25 Depth 35-33'
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 20.555 tons
 Coefficient of fineness for use with Tables .493

Port of Survey Ellesmere Port. (Stanlow Dock) near Birkenhead.
 Date of Survey June 9th 1932
 Name of Surveyor A.B. Murray
 Particulars of Classification +100A1
Carrying Petroleum in bulk.

Depth for Freeboard (D) Moulded depth ... <u>35-33'</u> Stringer plate ... <u>.06</u> Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ Depth for Freeboard (D) = <u>35.39</u>	Depth correction (a) Where D is greater than Table depth (D-Table depth) R = $(35.39 - 31.33) \times 5 = 12.18$ (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) <u>64-25</u> Standard Round of Beam = $\frac{B \times 12}{50} = 15.42$ Ship's Round of Beam = <u>16-12.5</u> Difference <u>EXCESS .70</u> Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.70}{4} \times .6117 = .11$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>105-16'</u>	<u>105-16'</u>	<u>7'-10 1/2"</u>	-	<u>105-16'</u>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed...	<u>30-34'</u>	<u>30-34'</u>	<u>7'-6"</u>	-	<u>30-34'</u>
" overhang aft ...					
" overhang forward					
F'cle enclosed ...	<u>47-0'</u>	<u>47-00'</u>	<u>7'-10 1/2"</u>	-	<u>47-00'</u>
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" " forward					
Total ...	<u>182-50'</u>	<u>182-50'</u>			<u>182-50'</u>

Standard Height of Superstructure	<u>7-50'</u>
" " R.Q.D.	<u>"</u>
Deduction for complete superstructure	<u>42-00'</u>
Percentage covered $\frac{S}{L} =$	<u>38.83</u>
" " $\frac{S_1}{L} =$	<u>38.83</u>
" " $\frac{E}{L} =$	<u>38.83</u>
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	<u>TANKER</u>
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	<u>29.83</u>
Interpolation for bridge less than 2L (if required)	
Deduction = .2983 x 42.00 =	<u>12.53</u>

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>54.00</u>	1		<u>54.00</u>	<u>51.0</u>	<u>54.00</u>	1		<u>54.00</u>
1/4 L from A.P. ...	<u>25.36</u>	4		<u>101.44</u>	<u>23.5</u>	<u>24.49</u>	4		<u>97.96</u>
1/2 L " ...	<u>6.24</u>	2		<u>12.54</u>	<u>5.0</u>	<u>6.11</u>	2		<u>12.22</u>
Amidships ...	-	4		-	-	-	4		-
3/4 L from F.P. ...	<u>12.54</u>	2		<u>25.08</u>	<u>12.0</u>	<u>13.30</u>	2		<u>26.60</u>
3/4 L " ...	<u>50.73</u>	4		<u>202.92</u>	<u>52.0</u>	<u>53.32</u>	4		<u>213.28</u>
F.P. ...	<u>114.00</u>	1		<u>114.00</u>	<u>114.0</u>	<u>120.00</u>	1		<u>120.00</u>
Total ...				<u>512.98</u>					<u>524.06</u>

Mean actual sheer aft = deficient .75
 Mean standard sheer aft = "
 Mean actual sheer forward = excess
 Mean standard sheer forward = "
 Length of enclosed superstructure forward of amidships = TANKER.
 " " aft of " = "

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{11.08}{18} \left(.75 - \frac{.559}{1941} \right) = .34$
 If limited on account of midship superstructure. "
 If limited to maximum allowance of 1 1/2 ins. per 100 ft. "

Deduction for Tropical Freeboard. Addition for Winter and Winter North Atlantic Freeboard. Depth to Freeboard Deck = <u>35.39</u> Summer freeboard = <u>4.14</u> Moulded draught (d) = <u>28.22</u> Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>7.05</u> Addition for Winter North Atlantic Freeboard (if required) = <u>4.10</u>	Deduction for Fresh Water. Displacement in salt water at summer load water line $\Delta = 19368$ Tons per inch immersion at summer load water line $T = 61.44$ Deduction = $\frac{\Delta}{40T}$ inches = <u>4.88</u>	TABULAR FREEBOARD corrected for Flush Deck (if required) Correction for coefficient $\frac{.793 + .08}{1.36} = \frac{.873}{1.36}$ <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><u>12.18</u></td> <td></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td></td> <td><u>12.53</u></td> </tr> <tr> <td>Sheer correction ...</td> <td></td> <td><u>.34</u></td> </tr> <tr> <td>Round of Beam correction ...</td> <td></td> <td><u>.11</u></td> </tr> <tr> <td>Correction for Thickness of Deck amidships</td> <td></td> <td></td> </tr> <tr> <td>Other corrections, scantlings, etc. ...</td> <td></td> <td></td> </tr> <tr> <td></td> <td><u>12.18</u></td> <td><u>12.98</u></td> </tr> </table> Summer Freeboard = <u>86.08</u>		+	-	Depth Correction ...	<u>12.18</u>		Deduction for superstructures ...		<u>12.53</u>	Sheer correction ...		<u>.34</u>	Round of Beam correction ...		<u>.11</u>	Correction for Thickness of Deck amidships			Other corrections, scantlings, etc. ...				<u>12.18</u>	<u>12.98</u>
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Steel, Deck:-

Tropical Fresh Water Line above Centre of Disc ...	<u>319</u>	Tropical Fresh Water Freeboard ...	<u>1804</u>
Fresh Water Line " " ...	<u>200</u>	Fresh Water " " ...	<u>1986</u>
Tropical Line " " ...	<u>199</u>	Tropical " " ...	<u>2004</u>
Winter Line below " " ...	<u>199</u>	Winter " " ...	<u>2305</u>
Winter North Atlantic Line " " ...	<u>199</u>	Winter North Atlantic " " ...	<u>2484</u>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
		A.				B.		C.		D.	
Description of Hatchway		Cargo Hood.	20 Main or Hatchways	20 Summer Tank Hatchways	4 OT. ZAFFERDAM HATCHES.	FOREHOLD PUMP ROOM HATCH.	2-WING BUNKER HATCHES "A"	2 BUNKER MACHINES ON P.O.P. TRUNKED.	HATCH TO STORE AND HATCH TO STEERING FLAT ON FOOT.	HATCH ON FORECASTLE TO STORE	
Dimensions of Hatchway		9'-8" x 13'-0"	6'-0" x 3'-0"	6'-0" x 3'-0"	2'-4" x 1'-6"	3'-0" x 3'-0"	3'-3" x 2'-0"	2'-2" x 1'-6"	3'-11" x 3'-0"	3'-0" x 2'-6"	
COAMINGS	Height above Deck	32"	32"	32"	10' x 3 1/2" x 1/2"	32"	32"	10' x 3 1/2" x 1/2" BA	19"	24"	
	Thickness { Sides	7/16"	7/16"	7/16"	BA.	3/8"	3/8"	✓	7/16"	7/16"	
	{ Ends							✓			
	Stiffeners	7 x 3 1/2 x 1/2 BA	✓	✓	✓	✓	✓	✓	✓	✓	
	Brackets, Stays	1	✓	✓	✓	✓	✓	✓	✓	✓	
HATCH BEAMS	Number	None	✓	✓	✓	✓	✓	✓	✓	✓	
	Spacing										
	Scantling and Sketch										
	Bearing Surface										
FORE AND AFTERS	Number	None	✓	✓	✓	✓	✓	✓	✓	✓	
	Spacing										
	Unsupported Lengths										
	Scantling* and Sketch										
	Bearing Surface										
HATCH COVERS	Material	Steel stiffened	Steel .50	Steel .50	Steel .44	Steel .50	Steel .44	Steel .44	Stiffened steel	Steel hinged	
	Thickness	7/16"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	hinged cover	cover 7/16" thick	
	How fitted	Wing nuts	Wing nuts	Wing nuts	6 wing nuts	Wing nuts spaced	Wing nuts	6 wing nuts	7/16" thick	2 hinges 2	
	Bearing Surface	Spaced 14"	Spaced 15 1/2"	Spaced 15 1/2"		15 1/2"	Spaced 14"		Wing nuts	Wing nuts.	
Spacing of Cleats		✓	✓	✓	✓	✓	✓	✓	✓	✓	
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 fiddley, funnel and ventilator coamings :—

Fidley, Tunnel ventilator Coamings in efficient condition. Fidley gratings fitted with hinged storm covers (steel) E.R. Skylights steel with steel hinged flaps.

Particulars of Flush Bunker Scuttles :—

None

Particulars of Companionways :—

None

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

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

2-12" dia	Coaming 36" high on Fore Deck to Fore Mast.	2-12" dia	Coaming 3'-0" on Posts to Accom.
2-8" dia	Coaming 33" high on Bridge Deck to Stores on Foreboard Deck.	2-6" dia	Coaming 2'-0" on Posts to Accom.
2-8" dia	Coaming 36" high on Foreboard Deck to Fore Mast.	2-6" dia	Coaming 12" on Posts to Accom.
1-12" dia	Coaming 7'-0" high on Foreboard Deck to Fore Mast.	1-6" dia	Coaming 18" on Posts to Accom.
2-22" dia	Coaming 4'-0" high on Foreboard Deck to Pump Room (Bracketed to P. Room Coaming).		
2-8" dia	Coaming 11'-0" high on Foreboard Deck to Fore Mast (Bracketed to Posts Deck).		

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

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

1-4" dia - 21' high on Forecastle deck to F.P. Tank.	2-2" Air pipes on Poop to Bunker 18" high.
1-3" dia 26' high on Freeboard deck to Fore Deep Tank.	4-3" Air pipes on Poop to No 3 Tank 18" high.
1-2½" dia 20" high on Freeboard deck to Fore Deep Tank.	4-2" Air pipes on Poop to No 3 Tank 18" high.
1-3½" dia 14" high on Freeboard deck to Fore Deep Tank.	
2-3½" dia 20" high on Freeboard deck to Fore Deep Tank.	
2-½" dia 4-5" high on Freeboard deck to Aft Cofferdam.	
4-6" dia 5'-0" high on Freeboard deck to Wing Bunkers.	

Particulars of Gangway Cargo and Coaling Ports:—

More

Particulars of Scuppers and Sanitary Discharge Pipes — *Stringer Scuppers 5" x 3".*

Sanitary discharge pipes fitted with steam valves at the ship's side.

Particulars of Side Scuttles :

Side Scuttles: All side scuttles fitted with hinged deadlights.

Particulars of Guard Rails :—

On Forecastle 3'-8" high, stanchions spaced 4'-3" 3 rails.
 In Wells. 3'-6" high, stanchions spaced 4'-8" 3 rails.
 On Poop 3'-5" high, stanchions spaced 4'-6" 3 rails.

Particulars of Gangways, Lifelines, etc. :—

See Sketch Overleaf.

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	140' 0"	3' 6"	Open rails.	—		
Forward Well	114' 6"	3' 6"	open rails.			

*State position of each freeing port } After Well: —
 { Forward Well: —
 { P. and A. position and height above deck edge)
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — open rails. sill 6".

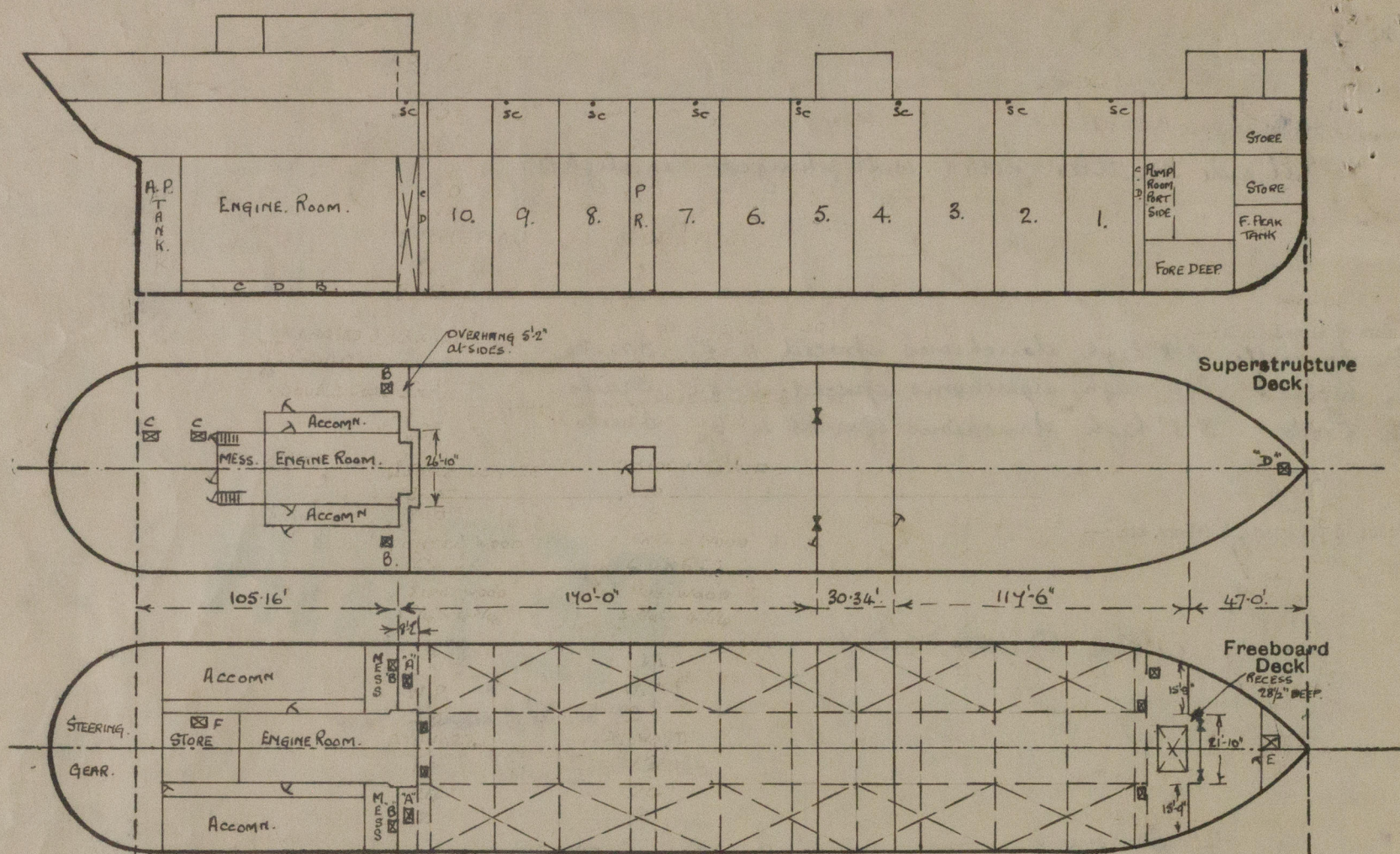
Additional area where sheer is less than standard.

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	✓	1/2"	7/16"	10" x 3 1/2' x 1/2" BA.	3'-0"	Brackets at top.	None	—	7'-10 1/2".
Raised Quarter Deck Bulkhead ...	✓								
Bridge, After Bulkhead	Vertical Plating	3/8"	6 x 3 x 5/8 BA.	3'-0"	Brackets at top.	7'-6" x 3'-1 1/4" 5'-1" x 1'-11 1/2".	None	17"	7'-6".
Bridge, Forward Bulkhead	Vertical plating	7/16"	10 x 3 1/2 x 1/2" BA.	3'-0"	Brackets top and bottom.	4'-11" x 3'-1"	22"		7'-6".
Forecastle Bulkhead	Vertical plating	5/16"	6 x 3 x 7/16 BA or 3 1/2 x 3 x 3/8 LS.	2'-3"	None	7'-8" x 3'-1 1/2".	None		7'-10 1/2".
Trunk, Aft	✓								
Trunk, Forward	✓								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	Vertical plating	1/4"	flanged plates and 3 x 3 x 3/8 L.	2'-3"	None	5'-7" x 2'-6"	11"		7'-10 1/2".
Exposed Machinery Casings on Super-structure Decks	Vertical plating	5/16"	3 x 3 x 3/8 L.	2'-3"	Brackets at top.	5'-8" x 2'-6"	10"		4'-3".
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	✓
Raised Quarter Deck Bulkhead	✓
Bridge, After Bulkhead	$\frac{3}{4}$ " Stiffened plate secured with hook bolts spaced 15" and one steel hinged door Manipulated from A. both sides
Bridge, Forward Bulkhead	Steel hinged WT Door Manipulated from outside only. 7 cleat handles.
Forecastle Bulkhead	$\frac{3}{8}$ " Stiffened plate secured with $\frac{1}{8}$ " hook bolts spaced 15"
Forward Machinery Casings on Fore- ward Raised Quarter Deck	Steel hinged doors Manipulated from both sides
Forward Machinery Casings on Super- structure Decks	Steel hinged doors Manipulated from both sides
Machinery Casings within Superstruc- tures not fitted with Class I Closing Appliances	✓
Deckhouses on Flush Deck Ships	✓

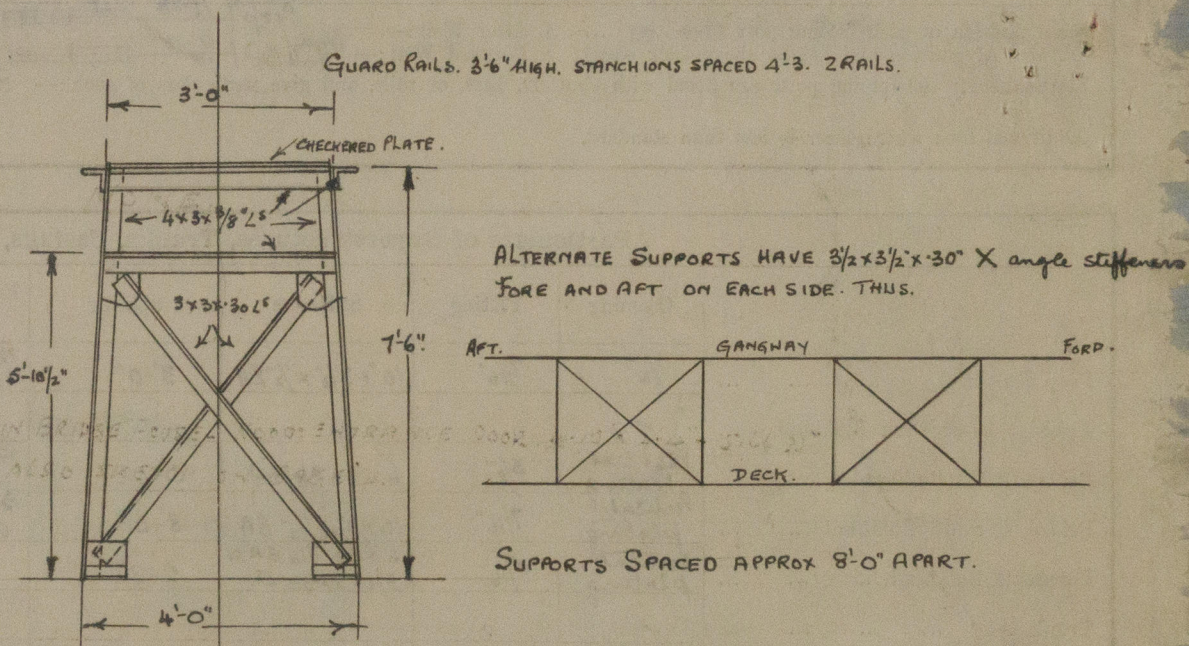
Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the ship are to be shewn on the following sketches:—



E HATCH ON FREEBOARD DECK, WITHIN FORECASTLE. 4'0" x 4'1". COAMING. 9' x 3 1/2' x 1/2" BA. 2 1/2" WOOD COVERS. 3" BEARING. NO CLEATS. NO TARPULINS.
F HATCH ON FREEBOARD DECK WITHIN POOP (IN STORE) 3'5" x 3'0". COAMING. 3' x 3' x 30 L. 2 1/2" WOOD COVERS. NO CLEATS. NO TARPULINS.

The Pump Room is strongly constructed of steel with steel hinged HT Door. 65' x 24". Manipulated from both sides 4 deal handles. Sill 12". There is an Access Hatch on top of the Fore Hold Hatch Cover. 2'6" x 3'0". coaming 3 1/2' x 3 1/2" L. steel HT cover, hinged. 1 1/8" thick 6 wing nuts.

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



DETAILS OF FORE AND AFT GANGWAY.

VESSEL AFLOAT. FOR FREEBOARD MEASUREMENT ONLY.

Builder's name and yard number *Blohm + Voss K. & A. Hamburg.*

Names of sister ships *Kaja Kuntzen*

Owners *Stockholms Rederiaktie Sra.*

Fee £ *17* : 0 : 0.

Received by me

Expenses - : *11* : 0. (at 2 NOV 1932) *from London*

10/24/11/32



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