

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having Roof, bridge and fore-castle

Port of Survey Stockholm

Date of Survey 4/11/1932

Name of Surveyor H. J. Andersson

Particulars of Classification + 100 A1

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<u>Grim</u>	<u>Swedish Stockholm</u>	<u>6064</u>	<u>1323</u>	<u>1919</u>

Moulded Dimensions: Length 235 Breadth 37.5 Depth 18.58

Moulded displacement at moulded draught = 85 per cent. of moulded depth 3.089 (at 15.79' draught) tons

Coefficient of fineness for use with Tables .777

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>18.58</u>	(a) Where D is greater than Table depth (D - Table depth) R = $(18.62 - 15.67) \times 1.807 = +5.33$	Moulded Breadth (B) <u>37.5</u>
Stringer plate ... <u>.44</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = 9.0$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = <u>9.5</u>
Depth for Freeboard (D) = <u>18.62</u>		Difference <u>Even</u> <u>.5</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.5}{4} (1 - .4453) = .07$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poep enclosed ...	<u>17.25</u>	<u>17.25</u>	<u>7</u>		<u>17.25</u>	Standard Height of Superstructure <u>6.0</u>
" overhang ...						" " R.Q.D.
R.Q.D. enclosed ...						Deduction for complete superstructure <u>29.5</u>
" overhang ...						Percentage covered $\frac{S}{L} = 45.20$
Bridge enclosed...	<u>57.58</u>	<u>57.58</u>	<u>7</u>		<u>57.58</u>	" " $\frac{S_1}{L} = 44.53$
" overhang aft ...	<u>6.42</u>	<u>4.81</u>	<u>7</u>		<u>4.81</u>	" " $\frac{E}{L} = 44.53$
" overhang forward						Percentage from Table, Line A. (corrected for absence of fore-castle (if required))
Fore enclosed ...	<u>25.0</u>	<u>25.00</u>	<u>7</u>		<u>25.00</u>	Percentage from Table, Line B. <u>31.35</u>
" overhang ...						(corrected for absence of fore-castle (if required))
Trunk-aft ...						Interpolation for bridge less than 2L (if required)
" forward ...						Deduction = $.3135 \times 29.5 = -9.25$
Tonnage opening aft ...						
" forward						
Total ...	<u>106.25</u>	<u>104.64</u>			<u>104.64</u>	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>33.50</u>	1		<u>33.50</u>	<u>38</u>	<u>34.00</u>	1		<u>34.00</u>	Mean actual sheer aft = <u>Even</u>
$\frac{1}{2}$ L from A.P. ...	<u>14.90</u>	4		<u>59.60</u>	<u>15.5</u>	<u>15.01</u>	4		<u>60.04</u>	Mean actual sheer forward = <u>Even</u>
$\frac{2}{3}$ L " ...	<u>3.685</u>	2		<u>7.37</u>	<u>3.5</u>	<u>3.74</u>	2		<u>7.48</u>	Length of enclosed superstructure forward of amidships = <u>.12</u>
Amidships ...		4			<u>0</u>		4			" " aft of " = <u>.124</u>
$\frac{2}{3}$ L from F.P. ...	<u>7.37</u>	2		<u>14.74</u>	<u>7.0</u>	<u>7.29</u>	2		<u>14.58</u>	
$\frac{1}{2}$ L " ...	<u>29.81</u>	4		<u>119.24</u>	<u>29.0</u>	<u>29.23</u>	4		<u>116.92</u>	
F.P. ...	<u>67.00</u>	1		<u>67.00</u>	<u>72.0</u>	<u>72.00</u>	1		<u>72.00</u>	
Total ...				<u>301.49</u>					<u>305.02</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{3.53}{18} \left(.75 - \frac{2260}{235} \right) = -10$

If limited on account of midship superstructure.

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

<p>Deduction for Tropical Freeboard.</p> <p>Addition for Winter and Winter North Atlantic Freeboard.</p> <p>Depth to Freeboard Deck = <u>18.62</u></p> <p>Summer freeboard = <u>2.28</u></p> <p>Moulded draught (d) = <u>16.34</u></p> <p>Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = <u>4.08</u></p> <p>Addition for Winter North Atlantic Freeboard (if required) = <u>2</u></p>	<p>Deduction for Fresh Water.</p> <p>Displacement in salt water at summer load water line $\Delta = 2908$ tons at 15' draught</p> <p>Tons per inch immersion at summer load water line $T = 1761$ at 16' draught</p> <p>Deduction = $\frac{\Delta}{40T}$ inches = $\frac{2908}{40 \times 1761} = 4.62$</p>	<p>TABULAR FREEBOARD corrected for Flush Deck (if required)</p> <p>Correction for coefficient $\frac{.777 + .68}{1.36} = \frac{1.457}{1.36}$</p> <table border="1"> <tr> <th></th> <th>+</th> <th>-</th> </tr> <tr> <td>Depth Correction ...</td> <td><u>5.33</u></td> <td></td> </tr> <tr> <td>Deduction for superstructures ...</td> <td></td> <td><u>9.25</u></td> </tr> <tr> <td>Sheer correction ...</td> <td></td> <td><u>.10</u></td> </tr> <tr> <td>Round of Beam correction ...</td> <td></td> <td><u>.07</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>5.33</u></td> <td><u>9.42</u></td> </tr> </table> <p>Summer Freeboard = <u>27.41</u></p>		+	-	Depth Correction ...	<u>5.33</u>		Deduction for superstructures ...		<u>9.25</u>	Sheer correction ...		<u>.10</u>	Round of Beam correction ...		<u>.07</u>	Correction for Thickness of Deck amidships ...			Other corrections, scantlings, etc. ...				<u>5.33</u>	<u>9.42</u>
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SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc ...	<u>8.70</u>	Tropical Fresh Water Freeboard ...	<u>18.71</u>
Fresh Water Line " "	<u>4.62</u>	Fresh Water " "	<u>22.79</u>
Tropical Line " "	<u>4.08</u>	Tropical " "	<u>23.33</u>
Winter Line below " "	<u>4.08</u>	Winter " "	<u>31.49</u>
Winter North Atlantic Line " "	<u>6.08</u>	Winter North Atlantic " "	<u>33.49</u>

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	1	2	3	4	Hatch to coal scot	Bunker hatch on bridge deck	Hatch on fore deck		
Dimensions of Hatchway	14'2" x 14'0"	21'1" x 14'0"	21'1" x 14'0"	21'1" x 14'0"	12'2" x 3'9"	3'7" x 2'3"	12'0" x 5'8"		
COAMINGS	Height above Deck	35"	35"	35"	35"	12'5"	17"	25"	
	Thickness	.44"	.44"	.44"	.44"	.36"	.36"	.36"	
	Sides	.44"	.44"	.44"	.44"	.36"	.36"	.36"	
	Stiffeners	7x3x40BA	7x3x40BA	7x3x40BA	7x3x40BA	none	none	none	
HATCH BEAMS	Brackets, Stays	One 4x3x40	Two 4x3x40	Two 4x3x40	Two 4x3x40	none	none	none	
	Number	3	4	4	4	none	none	none	
	Spacing	4'-9"	4'-2"	4'-2"	4'-2"	none	none	none	
	Scantling and Sketch	11"x32"	11"x32"	11"x32"	11"x32"	none	none	none	
FORE AND AFTERS	Bearing Surface	3x3x42	3x3x42	3x3x42	3x3x42	none	none	none	
	Number	3	3	3	3	none	none	none	
	Spacing	3'	3'	3'	3'	none	none	none	
	Unsupported Lengths	3'	3'	3'	3'	none	none	none	
HATCH COVERS	Scantling and Sketch	none	none	none	none	none	none	none	
	Bearing Surface	none	none	none	none	none	none	none	
	Material	Wood	Wood	Wood	Wood	Wood	Wood	Wood	
	Thickness	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	
Spacing of Cleats	How fitted	3"	3"	3"	3"	2"	2"	2"	
	Bearing Surface	3"	3"	3"	3"	2"	2"	2"	
	Number of Taraulins	22"	26"	26"	26"	23"	17"	22"	
		3	3	3	3	2	2	2	

*Are wood fore and afters steel shod at all bearing surfaces? —
 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*

Particulars of fiddle, funnel and ventilator coamings:— *Fiddle opening: One off 5'-7" x 3'-3". Two off 5'-2" on top of casing 3" angle coaming. Steel covers with hinges and means for closing are fitted. Ventilators to boiler room (hot stack): 24" diam 13' high from top of engine 18" 3' high from top of*

Particulars of Flush Bunker Scuttles:— *2 flush bunker scuttles at fore end on bridge deck securely fastened*

Particulars of Companionways:— *One fore castle: Steel with hinged steel door 3'-10" x 2'-2" at aft end, sill 11'5" to crew's quarter. The door can be closed and secured from both sides*

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
Freeboard deck: 4 to cargo holds 40" x 14" x 36"; one to tunnel 37" x 9 1/2" x 36". Ribs in deck angle 3 1/2" apart. All with wood plugs and tarpaulin for closing. For the position of ventilators see sketch.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—
12-2" air pipes on freeboard deck 40" goose neck. For the position of air pipes see sketch.

Particulars of Gangway Cargo and Coaling Ports:—

None

Rpt. 9a.

Port of **STOCKHOLM.**

Freeboard
 Continuation of Report No. **0.11.** dated **26th April, 1932** on the s/s "GRIM"

S.S. "GRIM".

Load Line for Timber Deck Cargoes.

Superstructures and Machinery Casings. — This vessel is fitted with a fore-castle 25' by 7'. Amidships is a steel deck house fitted alongside engine and boiler casings, accommodations for officers and engineers. Timber deck cargo is stated never to be carried alongside the casing.

Double Bottom Tanks.

Nos. 3 & 4 watertight centre-division.

Bulwark. — The ship is fitted with a permanent steel bulwark 4' high in wells forward and aft, stiffened at the upper edge by 6 1/2" x 3" x 30" BA, and supported by strong bulwark stays 8" x 40" B plates spaced 5'-10" apart, efficiently lugged to the steel deck.

Deck Openings. — Openings to spaces below freeboard deck or hatchway beams and covers are stated to be securely closed, battened down and in place respectively before timber deck cargo is loaded.

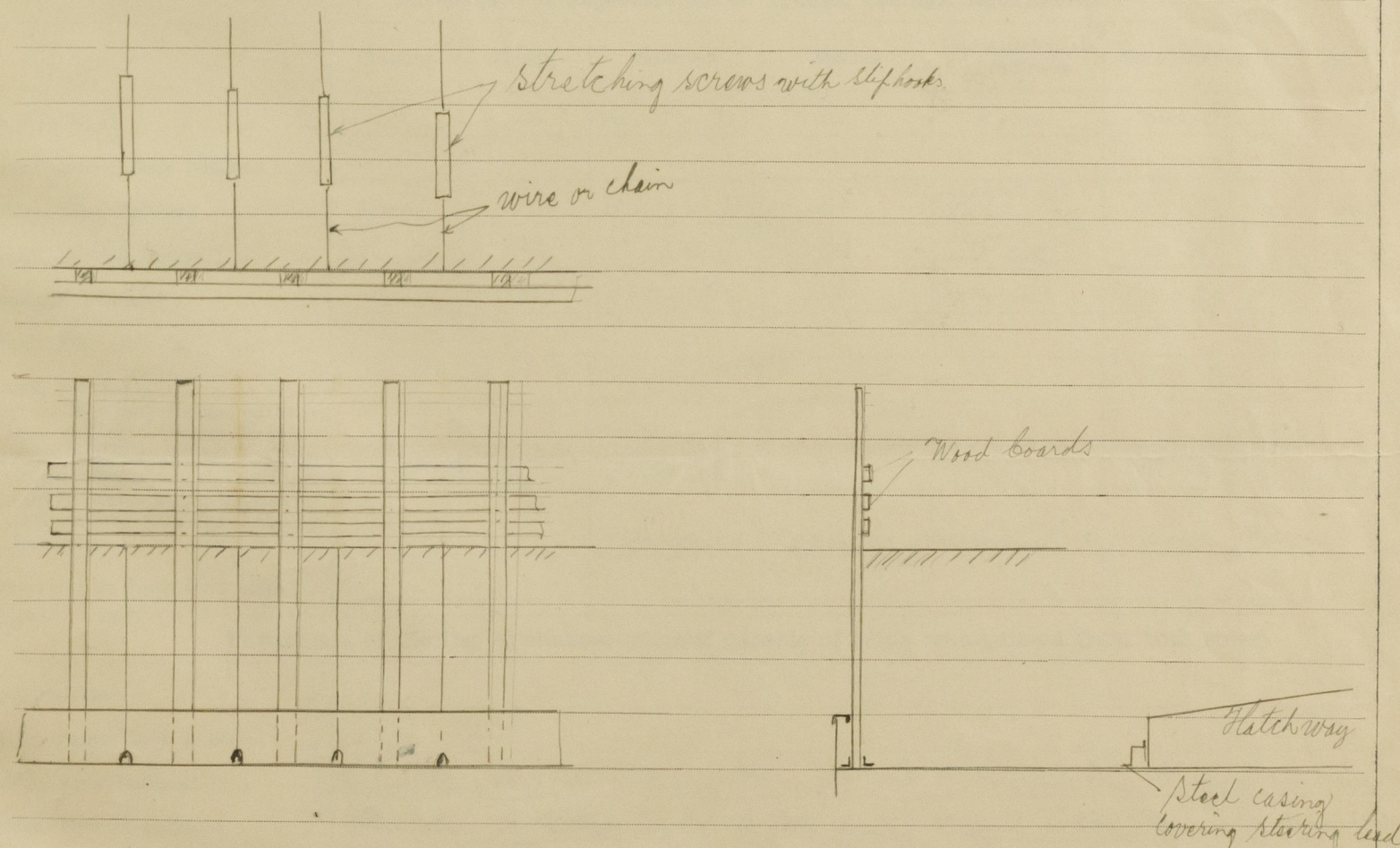
Lifelines. — On top of timber deck cargo are stated to be arranged as shown on the detailed sketch below.

Steering-gear. — The lead from the steering engine is protected by a permanently attached strong steel casing. An efficient hand steering-gear is placed aft for emergency purposes, clear of any timber deck cargoes.

Uprights. — Strong angle sockets to take 4 1/2" x 9" timbers are permanently and efficiently secured to the deck alongside the bulwark and spaced 6' apart.

Lashings. — Eye-plates for lashings ~~will be fitted~~ and riveted to the sheerstrake and spaced in accordance with regulations.

The sketch below is stated by the Captain to be arrangement of securing the timber deck cargo



Particulars of Scuppers and Sanitary Discharge Pipes —

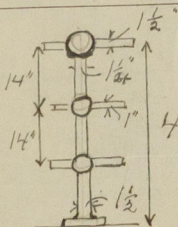
The discharge pipes amidships are led through the ship's side above the freeboard deck. The discharge pipe forward is led through the ship's side 2' below the freeboard deck. All pipes are fitted with storm valves.

Particulars of Side Scuttles:

The side scuttles in crew spaces forward are fitted with efficient inside dead lights permanently attached in their proper positions.

Particulars of Guard Rails:—

On poop and fore-castle.



Stanchions spaced about 42" 5' 4" apart.

Bulwark is fitted on bridge deck 3.5' high.

Particulars of Gangways, Lifelines, etc.:—

None

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	71'	4'	35.5' x 17.5'	3	13 □'	14 □'
Forward Well	64.17	4'	35.5' x 17.5'	3	13 □'	13 □'

State position of each freeing port (F. and A. position and height above deck edge) } After Well:— 21.3'; 42.7'; 56.9' from poop front. Lower edge 11" above deck.
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— } Forward Well:— 9.5'; 21.6'; 42.5' bridge
 Slung shutters and 1 rail to each

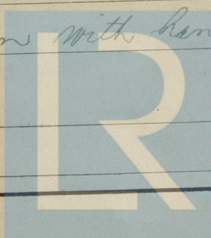
Additional area where sheer is less than standard. one mooring pipe, starb and port, in each well.

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	—	.32"	4 1/2" x 3" x .32"	30"	none	none	—	7'
Raised Quarter Deck Bulkhead ...	—	.32"	—	—	—	—	—	—
Bridge, After Bulkhead	none	.32"	3 1/2" x 3 1/2" x .36"	29"	brackets at bottom	78" x 35"	none	7'
Bridge, Forward Bulkhead	15 1/2" x .36"	.32"	7" x 3" x .36"	30"	brackets top and bottom	60" x 37"	15 1/2"	7'
Forecastle Bulkhead	none	.32"	3" x 3" x .36"	28"	none	59" x 23"	15"	7'
Trunk, Aft	—	—	—	—	—	—	—	—
Trunk, Forward	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	—	—	—	—	—	—	—	—
Exposed Machinery Casings on Super-structure Decks	12 1/2"	.30"	3" x 3" x .32"	37"	none	56" x 21"	15"	7'
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	—	—	Engine casings protected by deck house	—	—	—	—	—
Deckhouses on Flush Deck Ships ...	—	—	—	—	—	—	—	—

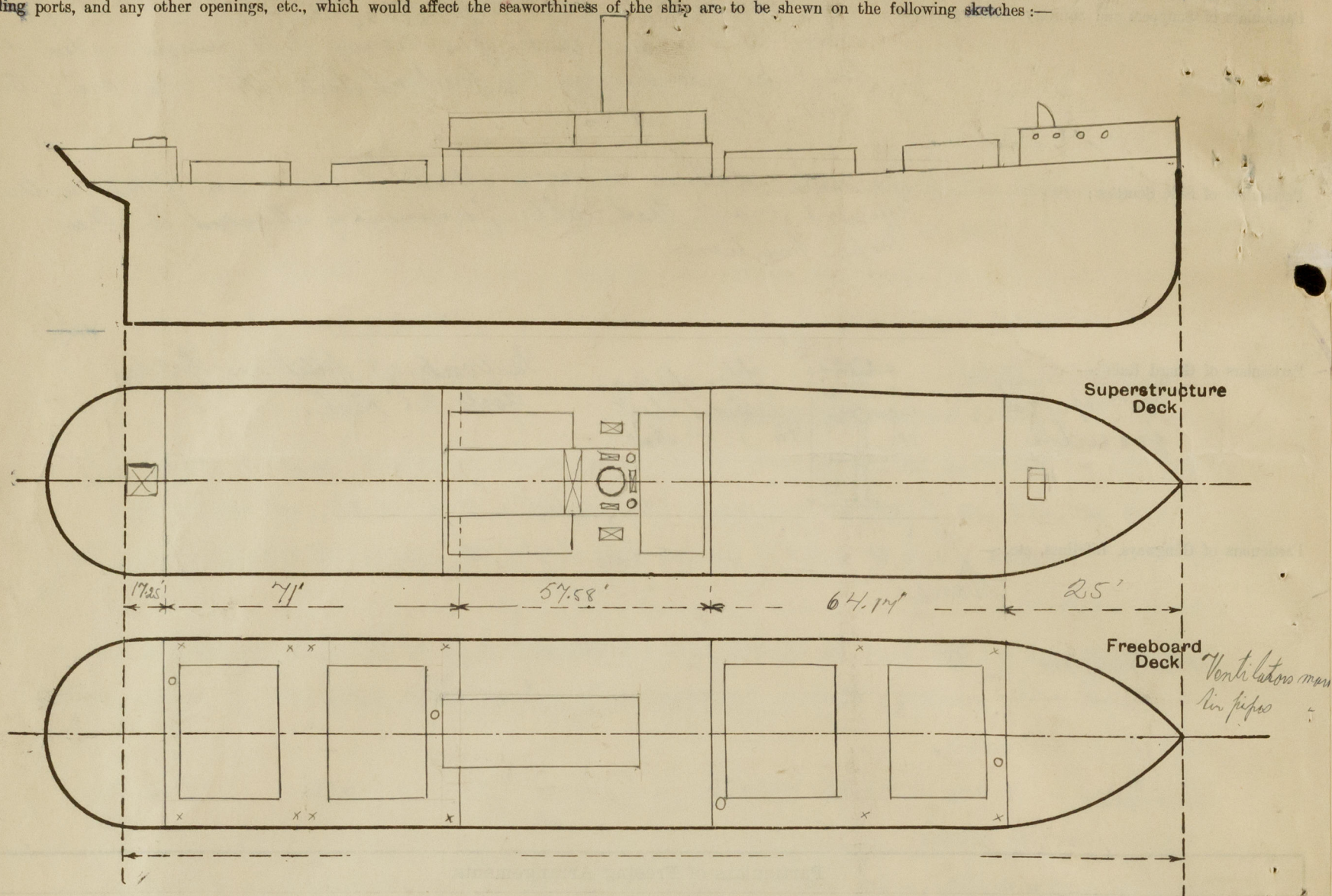
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead	
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead	25" shifting boards fitted with hook bolts not passing through bulkhead. Spaced 18" apart.
Bridge, Forward Bulkhead	Steel doors with hinges and bolts, bolts passing through bulkhead, spaced 10-12" apart. Closed from outside only.
Forecastle Bulkhead	Steel door to fore-castle with handle openings from both sides.
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	
Exposed Machinery Casings on Super-structure Decks	One steel door on each side, to boiler rooms with handle openings from both sides.
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	
Deckhouses on Flush Deck Ships ...	



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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:—

For timber deck cargo please see attached sheet.

Builder's name and yard number

Kockums M. V. Aktieb. Malmö. Yard no. 128

Names of sister ships

5/s Asjö no. 14623 in R.B.

Owners

Stockholms Rederiaktieb. Förs. Stockholm.

Fee £

Lv. 170.0

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