

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Index. No. **3710**
(For London Office only.)
 Computation of Freeboard for Steamer, Sailing Ship, Tanker
 having Coop, Raised Quarter Deck, Bridge with Tonnage Opening, & Forecastle.
Port of Survey GothenburgDate of Survey 31 April 1932Name of Surveyor V. J. J. J. J.Particulars of Classification 100 A. 1.S.S. EOS

(Type of Superstructures.)

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

S. BOLIVIAEstonia
Gothenburg, Tallinn527515221890-2Moulded Dimensions: Length 260'0" Breadth 36'2" Depth 19'3"Moulded displacement at moulded draught = 85 per cent. of moulded depth. 3351 tonsCoefficient of fineness for use with Tables .766

Depth for Freeboard (D)

Moulded depth 19.25Stringer plate05

Sheathing on exposed deck

$$1 \left(\frac{L-S}{L} \right) =$$

Depth for Freeboard (D) = 19.30

Depth correction

(a) Where D is greater than Table depth

$$(D - \text{Table depth}) R = (19.30 - 17.33) 2.00$$

$$= +3.94$$

(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) 36.00

$$\text{Standard Round of Beam} = \frac{B \times 12}{50} = 8.64$$

$$\text{Ship's Round of Beam} = 8$$

Difference Deficit .64

Restricted to

$$\text{Correction} = \frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.64}{4} \times .1279 = +.02$$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<u>28'0"</u>	<u>28.83</u>	<u>7'0"</u>	<u>3'6"</u>	<u>28.83</u>
" overhang ...	<u>1'0"</u>			<u>3'5"</u>	
R.Q.D. enclosed ...	<u>66'2"</u>	<u>66.17</u>	<u>3'6"</u>	<u>4'133"</u>	<u>56.04</u>
" overhang ...					
Bridge enclosed Forward ...	<u>43'00"</u>	<u>42.79</u>	<u>7'0"</u>		<u>42.79</u>
" overhang aft ...	<u>59'42"</u>	<u>59.21</u>			<u>59.21</u>
" overhang forward ...	<u>2'0"</u>				
F'cle enclosed ...	<u>24'22.60"</u>	<u>26.00</u>	<u>7'0"</u>		<u>26.00</u>
" overhang ...	<u>3'17"</u>	<u>1.58</u>			<u>1.58</u>
Trunk aft ...					
" forward ...					
Tonnage opening ...	<u>4'08"</u>	<u>2.18</u>			<u>2.18</u>
" forward ...					
Total ...	<u>230.67</u>	<u>226.76</u>			<u>216.63</u>

Standard Height of Superstructure 6.10" " R.Q.D. 4.133Deduction for complete superstructure 32.00Percentage covered $\frac{S}{L} = 88.72$ " " $\frac{S_1}{L} = 87.21$ " " $\frac{E}{L} = 83.32$

Percentage from Table, Line A.

(corrected for absence of forecastle (if required)) 79.41

Percentage from Table, Line B.

(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 32.00 x .7941 = -25.41

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<u>36.00</u>	<u>1</u>		<u>36.00</u>	<u>41"</u>	<u>39.00</u>	<u>1</u>		<u>39.00</u>
$\frac{1}{2}$ L from A.P. ...	<u>16.02</u>	<u>4</u>		<u>64.08</u>	<u>18"</u>	<u>17.35</u>	<u>4</u>		<u>69.40</u>
$\frac{2}{3}$ L " ...	<u>3.96</u>	<u>2</u>		<u>7.92</u>	<u>42"</u>	<u>4.29</u>	<u>2</u>		<u>8.58</u>
Amidships ...	<u>✓</u>	<u>4</u>		<u>✓</u>	<u>0</u>	<u>✓</u>	<u>4</u>		<u>✓</u>
$\frac{2}{3}$ L from F.P. ...	<u>7.92</u>	<u>2</u>		<u>15.84</u>	<u>12"</u>	<u>8.58</u>	<u>2</u>		<u>17.16</u>
$\frac{1}{2}$ L " ...	<u>32.04</u>	<u>4</u>		<u>128.16</u>	<u>39"</u>	<u>34.70</u>	<u>4</u>		<u>138.80</u>
F.P. ...	<u>72.00</u>	<u>1</u>		<u>72.00</u>	<u>83"</u>	<u>78.00</u>	<u>1</u>		<u>78.00</u>
Total ...	<u>324</u>			<u>324.00</u>					<u>350.94</u>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - S}{2L} \right) = \frac{26.94}{18} \left(\frac{.75 - .4436}{.3064} \right) = -.46$$

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 = 19.30 Ft.Summer freeboard = 1.22Moulded draught (d) = 18.08

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = 4.52Addition for Winter North Atlantic Freeboard (if required) = 2

Deduction for Fresh Water.

Displacement in salt water at summer load water line

 $\Delta =$ not available

Tons per inch immersion at summer load water line

T = not availableDeduction = $\frac{\Delta}{40T}$ inches= 4.52

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.766 + .68}{1.36} =$ Depth Correction 3.94Deduction for superstructures 25.41Sheer correction46Round of Beam correction02Correction for Thickness of Deck amidships -Other corrections, scantlings, etc. -Summer Freeboard = 14.66

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

Tropical Fresh Water Line above Centre of Disc ... 9'04" = 230Fresh Water Line " " ... 4'52" = 115Tropical Line " " ... 4'52" = 115Winter Line below " " ... 4'52" = 115Winter North Atlantic Line " " ... 6'52" = 166Tropical Fresh Water Freeboard ... 5.62Fresh Water " " ... 10.14Tropical " " ... 10.14Winter " " ... 19.18Winter North Atlantic " " ... 21.18

W382-0189 1/2

RECEIVED 10 MAY 1932

RECEIVED 24 OCT 1934

RECEIVED 26 MAY 1932

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS												
Description of Hatchway			Forward Well	On Bridge Deck	Raised Q. Deck	Within Bridge Space	Under	Coal-hatches	Coal-hatches	Coal-hatches	Coal-hatches	
			N ^o 1.	N ^o 2.	N ^o 3.	N ^o 4.	Aft. of well near Q.	2 off p.s.	File.	on bridge-deck 2 p.s.	on fiddle top (d.)	
Dimensions of Hatchway			20' x 13'-11"	22'-3" x 13'-11"	22' x 14'	20' x 13'-10"	24' x 14'	4' x 4'	5'-9" x 4'	3'-8" x 3'-1"	5'-8" x 3'-6"	6'-1" x 11'-3"
COAMINGS	{	Height above Deck	33" above wood.	24"	32"	32"	12"	3 1/2"	3 1/2"	15"	15"	12"
		Thickness { Sides	40"	40"	40"	40"	42"	36"	36"	34"	34"	40"
			Ends	40"	40"	40"	40"	40"	36"	36"	34"	34"
		Stiffeners	6" x 3" x 38"	None	None	None	✓	✓	✓	✓	✓	✓
		Brackets, Stays	None.	fitted.	fitted.	fitted.	✓	✓	✓	✓	✓	✓
HATCH BEAMS	{	Number	1	2	2	1	2					
		Spacing	10'-0"	7'-5"	7'-4"	10'-0"	8'-0"					
		Scantling and Sketch						Deck beams carried through.		Deck beams carried through.		
		Top angles:-	3" x 3" x 40"	3" x 3" x 40"	3" x 3" x 40"	3" x 3" x 40"	1 1/2" x 38"					
		Web plate:-	36" x 38"	23" x 42"	31" x 36"	30" x 36"	3 1/2" x 3" x 40" (3" Fl. Horiz.)					
FORE AND AFTERS	{	Round iron:-	3" x 1 1/2"	3" x 1 1/2"	3" x 1 1/2"	3" x 1 1/2"						
		Bearing Surface	3"	3"	3"	3"	3 1/2"					
		Number	3	3	3	3	3					
		Spacing	ab. 3'-6"	ab. 3'-6"	3'-6"	ab. 3'-6"	3'-6"					
		Unsupported Lengths Scantling* and Sketch	9'-7"	7'-0"	6'-11"	9'-7"	7'-7"	None		None		None
HATCH COVERS	{	Centre:-	8' x 8"	7 1/2' x 7 1/2'	7' x 7 1/2'	8' x 8"	8' x 7"					
		Wood.	7" x 6"	6" x 5'	6" x 6"	6" x 6"	6" x 5 1/2"					
		Sides:-	7" x 6"	6" x 5'	6" x 6"	6" x 6"	6" x 5 1/2"					
HATCH COVERS	{	Material	Wood.	Wood.	Wood.	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"	2 1/2"	2 1/2"	2 3/4"
		How fitted	Athwsh.	Athwsh.	Athwsh.	Athwsh.	Athwsh.	Athwsh.	Athwsh.	Athwsh.	Athwsh.	Athwsh.
		Bearing Surface	1 3/4"	65/4"	2 1/4"	3"	3"	1 1/4"	1 3/4"	2 1/2"	2 1/2"	2 1/2"
Spacing of Cleats			16"	28"	30"	31"	24"	None	None	24"	24"	36"
Number of Tarpaulins			2	2	2	2	2	2	2	2	2	2
*Are wood fore and afters steel shod at all bearing surfaces? <i>No! At ends only on side fore rafters and at bearing surfaces on centre fore rafters.</i>												
Are battens and wedges efficient and in good condition? <i>yes!</i>												
Are tarpaulins in good condition and in accordance with rule requirements? <i>yes!</i>												
Are lashings provided in accordance with rule requirements? <i>yes!</i>												

Particulars of fiddle, funnel and ventilator coamings:— All openings in fiddle top can be closed by strong, hinged steel plates, and vents to engine & boiler room and funnel on top of fiddle (3' 6" above bridge wood deck) and in good condition.

Particulars of Flush Bunker Scuttles:— *None fitted.*

Particulars of Companionways:—

On bridge-deck: (7' from stem) Steel 3' 6" x 3' 3" x 4' 8" (over wood deck), wood door 3' 4 1/2" x 2' 0 1/2" at after end, sill 11" above wood deck.
 On poop-deck: Wood 5' 3" x 4' x 6' (above wood deck), wood door 4' 6" x 2' 10" at after end, sill 9 1/2" over wood deck.

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

Forward well	1 vent p.s.	14" diam x 9' x 38 coam. (well supported).	All vents are fitted with wood plugs and canvas covers.
Bridge deck	1 - p.s.	8" - x 27" x 28"	
	2 - p.s.	16" - x 27" x 32"	
After well	1 - p.s.	16" - x 27" x 32"	
	1 - 4	8" - x 27" x 30"	
Poop	1 - 4	9" - x 27" x 30"	
	1 - p.s.	6" - x 14" x 25"	

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

All air pipes are flush with the deck, and fitted with screw down plugs.

Particulars of Gangway Cargo and Coaling Ports:— *None fitted.*

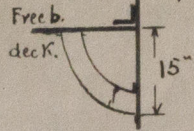


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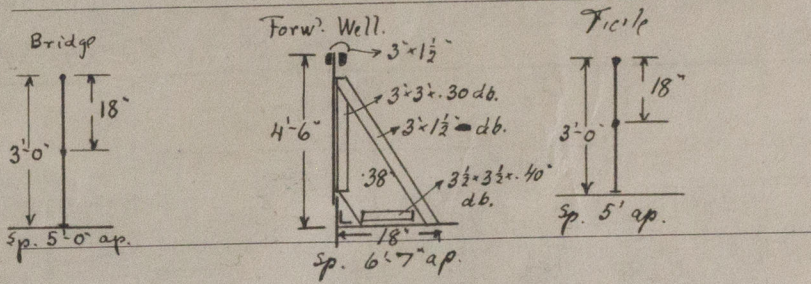
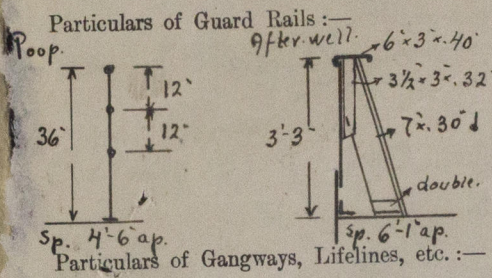
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Particulars of Scuppers and Sanitary Discharge Pipes — All sanitary discharge pipes through ship's sides are fitted with N.R. valves. Scuppers from bridge spaces forward and aft of well are fitted with storm valves. (Material: Not Cast Iron). A similar scupper is fitted from bridge well.



Particulars of Side Scuttles: All sidelights through ship's sides are fitted with strong, hinged deadlights. removable deadlights placed at an always accessible place.



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 R.A. deck...	66' 2"	3' 3"	16" x 20 1/2"	3	6.81 sq	13.2 sq
Forward Well ...	29' 7"	4' 6"	33" x 26"	2	11.9 sq	9.5 sq
Bridge well.	4' 10"	7' 0"	22" x 25"	1	3.82 sq	
State position of each freeing port (F. and A. position and height above deck edge) { After Well: — 54' 5" 30' 3" 10' 6" 18" bid. 5' 10" 17' 9" 12' 9" 9" Forward Well: — Bridge well. freeing port at middle sill 11" State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: — All freeing ports fitted with hinged plate shutters. 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 ...	not	accessible, wood lining				No openings.		3' 6" above R.A. deck.
Raised Quarter Deck Bulkhead ...	✓					4' 7" x 2' 3"	18"	3' 6" above R.A. deck.
Bridge, After Bulkhead ...	not	accessible, wood lining				No openings.		7' 0"
Bridge, Forward Bulkhead ...	not	accessible, wood lining				No openings.		
Forecastle Bulkhead ...	✓							
Trunk, Aft ...	✓							
Trunk, Forward ...	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓							
Exposed Machinery Casings on Superstructure Decks ...	✓							
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	17" x 30"	25"	3" x 3" x 34"	30"	None.	None.	None.	7' 0"
Deckhouses on Flush Deck Ships ...	✓							

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead ...	No openings.
Raised Quarter Deck Bulkhead ...	✓
Bridge, After Bulkhead ...	Wood door 4' 7" x 2' 3" capable of being manip. fr. both sides.
Bridge, Forward Bulkhead ...	No openings.
Forecastle Bulkhead ...	✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	✓
Exposed Machinery Casings on Superstructure Decks ...	✓
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ...	No openings.
Deckhouses on Flush Deck Ships ...	✓

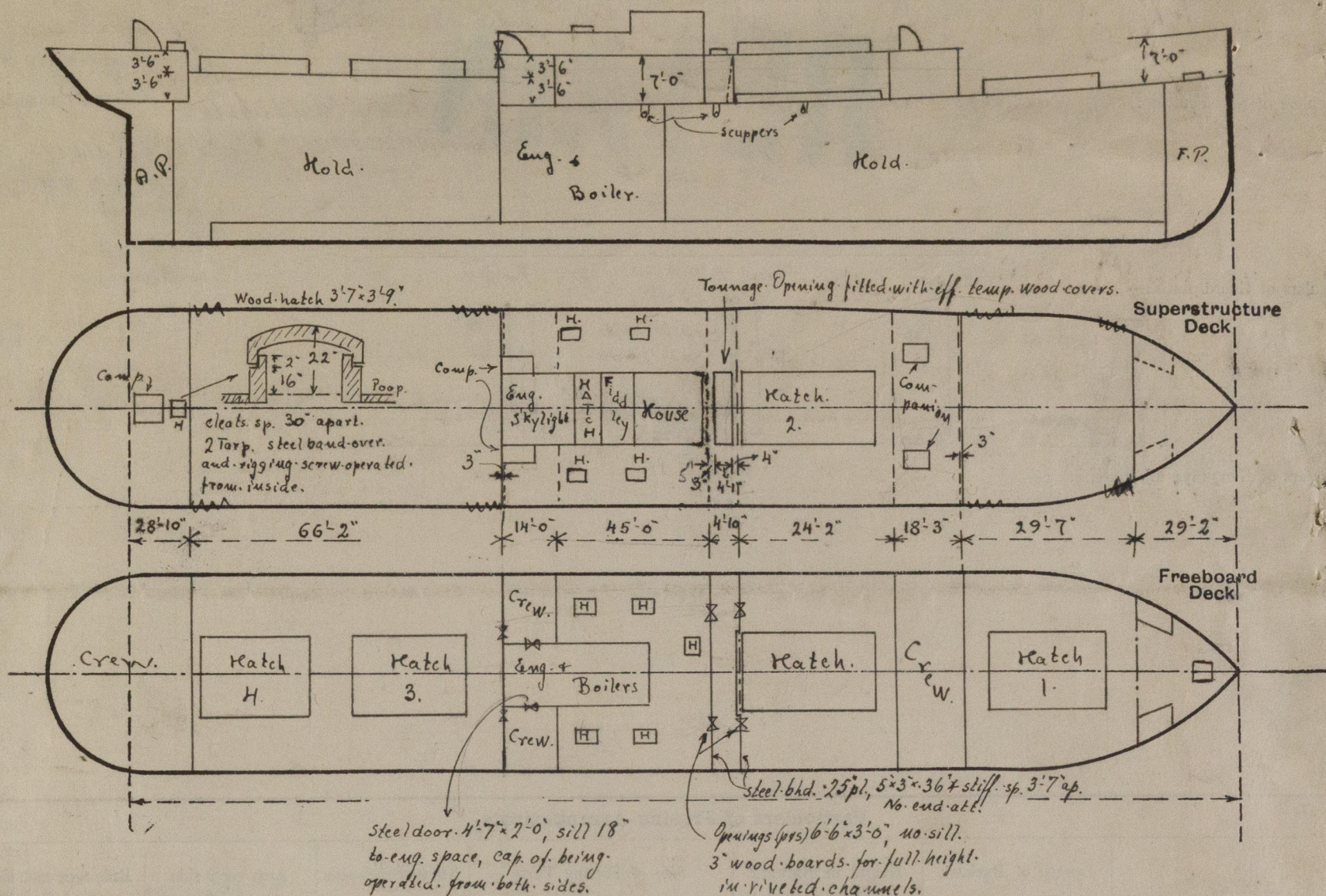
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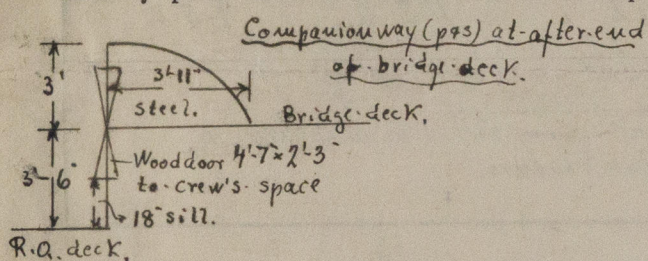
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the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



Forecastle $L_{10} = 26$
O.H. = 3.17 }

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



Bridge Fore
O.H. fore
" aft

Mean
Covered

Equs enclosed

42.42 ✓
.25 ✓
.33 ✓
43.00 ✓

42.42 ✓
.12 ✓
.25 ✓
42.79 ✓

Bridge Aft
O.H. fore

59.00 ✓
.42 ✓

59.00 ✓
.21 ✓

59.42 ✓

59.21 ✓

Tonnage opening

4.83 ✓

2.18 ✓

No sheathing in way of freeboard marking.

Builder's name and yard number Edwards S. B. Co. Ltd, Newcastle.

Yard. No 49.

Names of sister ships

Owners Rederiaktieb. Svenska Lloyd. (K.B. Bökman, Mgr) Gothenburg.

Fee Kr. 170.00

Received by me



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