

Lloyd's Register of Shipping.
SURVEYS FOR FREEBOARD.

Rpt. C.11.

Index. No. 32642
(For London Office only.)

27 JUN 1932

having *Roof, Trunk & Forecastle*
Computation of Freeboard for Steamer, Sailing Ship, Tanker

Port of Survey *Willemstad Curacao*

(Type of Superstructures.)

Date of Survey *May 20th 1932*

Ship's Name

Nationality and Port of Registry

Official Number

Gross Tonnage

Date of Build

TSS "ELENA"

Dutch Willemstad

3855

2609

1928-11

Name of Surveyor *A. Common*

Moulded Dimensions: Length *305.8*

Breadth *50.8*

Depth *15.8*

(12.7)

Moulded displacement at moulded draught = 85 per cent. of moulded depth *4663* tons

Coefficient of fineness for use with Tables *.838*

Particulars of Classification *+100A1*

Carrying Petroleum in bulk.
Right of way at bottom deck.

Depth for Freeboard (D)

Depth correction

Moulded depth ... *15.8*

(a) Where D is greater than Table depth
(D - Table depth) R =

Stringer plate ... *.04*

Sheathing on exposed deck

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

(b) Where D is less than Table depth (if allowed)
(Table depth - D) R =

Depth for Freeboard (D) = *15.84*

(20.33 - 15.04) 2.346 = -12.41
If restricted by superstructures *6.29 / 6.55 = -11.92*

Moulded Breadth (B)

Standard Round of Beam = $\frac{B \times 12}{50} =$ *12.72*

Ship's Round of Beam = *12.50*

Difference *excess = .48*

Restricted to

Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.48}{4} \left(1 - \frac{.812}{1.88} \right) = -.02$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<i>87.88</i>	<i>88.32</i>	<i>7.5</i>	<i>✓</i>	<i>88.32</i>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed...	<i>1.4</i>		<i>22.5</i>		
" overhang aft ...					
" overhang forward					
Fore enclosed ...	<i>29.33</i>	<i>33.85</i>	<i>7.5</i>		<i>33.85</i>
" overhang ...					
Trunk aft <i>125.5</i>					
" forward <i>189.6</i>		<i>125.50</i>	<i>6.29</i>	<i>6.55</i>	<i>120.53</i>
Tonnage opening aft ...	<i>55.33</i>		<i>7.5</i>		
" " forward					
Total ...	<i>122.17</i>	<i>247.67</i>			<i>242.70</i>

Standard Height of Superstructure *6.55*

" " R.Q.D. *✓*

Deduction for complete superstructure *35.67*

Percentage covered $\frac{S}{L} =$ *40.06*

" $\frac{S_1}{L} =$ *81.20*

" $\frac{E}{L} =$ *79.58*

Percentage from Table, Line A.
(corrected for absence of forecastle (if required))

Percentage from Table, Line B.
(corrected for absence of forecastle (if required)) *74.78*

Interpolation for bridge less than .2L (if required)

Deduction = *35.67* x *74.78* = *-26.67*

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>40.50</i>	1		<i>40.50</i>	0	0 0	1		0
$\frac{1}{6}$ L from A.P. ...	<i>18.02</i>	4		<i>72.08</i>	0	0 0	4		0
$\frac{2}{6}$ L " ...	<i>4.46</i>	2		<i>8.92</i>	0	0 0	2		0
Amidships ...	0	4		0	0	0 0	4		0
$\frac{3}{6}$ L from F.P. ...	<i>8.91</i>	2		<i>17.82</i>	0	0 0	2		0
$\frac{4}{6}$ L " ...	<i>36.05</i>	4		<i>144.20</i>	<i>1/2</i>	0 0	4		0
F.P. ...	<i>81.00</i>	1		<i>81.00</i>	<i>5"</i>	<i>35.55 35.55</i>	1		<i>35.55</i>
Total ...				<i>364.52</i>	<i>32"</i>				<i>35.55</i>

Mean actual sheer aft = *Deficient*
Mean standard sheer aft

Mean actual sheer forward = *Deficient*
Mean standard sheer forward

Length of enclosed superstructure forward of amidships = *1*
" " aft of " = *4*

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{328.97(.75 - .2003)}{18} = +10.05$
54.97

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 = *15.04*
Summer freeboard = *1.54*
Moulded draught (d) = *13.50*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$ *4954*

Tons per inch immersion at summer load water line

T = *32*

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

= *3.87* = *10 C*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

838 + 68 = 1518
1.36 = 1.36

Depth Correction ... *11.92*

Deduction for superstructures ... *26.67*

Sheer correction ... *10.05*

Round of Beam correction ... *.02*

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

10.05 38.61 - 28.56
Summer Freeboard = *18.43*

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, *Wood, Steel, Deck*: *18.43 = 47 Cm*

Tropical Fresh Water Line above Centre of Disc ... *7.25 = 19 Cm*
Fresh Water Line " " ... *3.87 = 10 "*
Tropical Line " " ... *3.38 = 9 "*
Winter Line below " " ... *3.38 = 9 "*
Winter North Atlantic Line " " ... *6.43 = 16 "*

Tropical Fresh Water Freeboard ... *28 Cm*
Fresh Water " " ... *37 Cm*
Tropical " " ... *38 Cm*
Winter " " ... *56 Cm*
Winter North Atlantic " " ... *63 Cm*

30 JUN 1932

002385-002400-0151

MARKING FORM

RECEIVED

1 SEP 1933

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	4 OT Hatch	2 OT Hatch	3 OT Hatch	1 OT Hatch	1 WT Hatch	1 WT Hatch	1 WT Hatch	1 WT Hatch	1 WT Hatch
Dimensions of Hatchway	6'6" x 1'7"	6'6" x 2'3"	6' x 4'	5' x 3'10"	6' x 1'0"	3' x 3'	2' x 2'	4' x 4'	
COAMINGS	Height above Deck	4' - 0"	4' - 0"	9"	9"	9"	9"	9"	
	Thickness	4'8"	4'8"	4'8"	4'8"	4'8"	4'8"	4'8"	
	Stiffeners	3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	
	Brackets, Stays	all round at top	all round at top	all round at top	all round at top	all round at top	all round at top	all round at top	
HATCH BEAMS	Number	1 plate	1 plate	1 plate	1 plate	1 plate	1 plate	1 plate	
	Spacing	over	over	over	over	over	over	over	
	Scantling and Sketch	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	
	Bearing Surface	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	
FORE AND AFTERS	Number	1 plate	1 plate	1 plate	1 plate	1 plate	1 plate	1 plate	
	Spacing	over	over	over	over	over	over	over	
	Unsupp'd Lengths	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	
	Scantling and Sketch	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	1'3' x 3' x 4'8"	
HATCH COVERS	Material	Steel	Steel	Steel	Steel	Steel	Steel	Steel	
	Thickness	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	
	How fitted	hinged	hinged	hinged	hinged	hinged	hinged	hinged	
	Bearing Surface	16 toggles	16 toggles	16 toggles	16 toggles	16 toggles	16 toggles	16 toggles	
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 Flush Bunker Scuttles:-

None

Particulars of Companionways:-

One steel companionway on forecastle deck 4' x 3' x 6'9" leading to enclosed forecastle, door of steel (with 12" sill) capable of being manipulated from both sides. One steel companionway (opening in trunk deck 9'9" x 5'6" x 7'6" x 5/16" plating) for pump room having door on aft side of same 4'6" x 2'3" x 18" sill - 8 toggles, can be operated from both sides.

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

Forecastle Deck:-

7-8" diam - 14" x 1/2" cast iron coverings to P.S. on spar.

Trunk Deck:-

2-14" diam - 36" x 3/8" steel coverings to Forehold + store.

2-18" diam - 36" x 3/8" steel coverings to pump room.

Efficient closing appliances provided

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

Forecastle Deck:-

1-4" diam - 33" above deck to fore peak tank.

5-3" diam - 7" - - - - - Sails + fireroom W.C. (L.S.)

Foreboard Deck:-

4-4" diam - 48" above deck to fore + aft wing tanks P.S.

2-2" diam from centre hatches to main vent on mast head.

Particulars of Gangway Cargo and Coaling Ports:-

None

Raised Quarter Deck:-

2-20" diam (8" coverings x 3/8" steel to Eng. room.

4-8" diam 36" x 1/4" coverings to stowage store aft.

Trunk Deck:-

3-6" diam 36" - - - - - to oil fuel bunkers.

Efficient closing appliances provided

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

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Particulars of Scuppers and Sanitary Discharge Pipes - 4-2 1/2" storm valves from crew lavatories fore, on ships side 1-4" storm valve from Capt. quarters amidships. 14-2 1/2" and 2-4" from alleyways, galleys, W.C. etc from accommodation aft. Efficient traps at inboard end + all storm valves fitted with gunmetal fixtures.

Particulars of Side Scuttles:-

All side scuttles in poop + forecastle fitted with efficient hinged deadlights permanently attached.

Particulars of Guard Rails:-

Foreboard deck - 3'6" high - 3 rails - stanchions spaced 5' to 5'6" apart.
Trunk top - 3'6" - - - - -
Raised Q Deck - 3'6" - - - - -
Forecastle Deck - 3'6" - - - - -

Particulars of Gangways, Lifelines, etc.:-

Trunk top forms gangway between poop + forecastle.

Gangway Lifeline

Particulars of Freeing Arrangements.

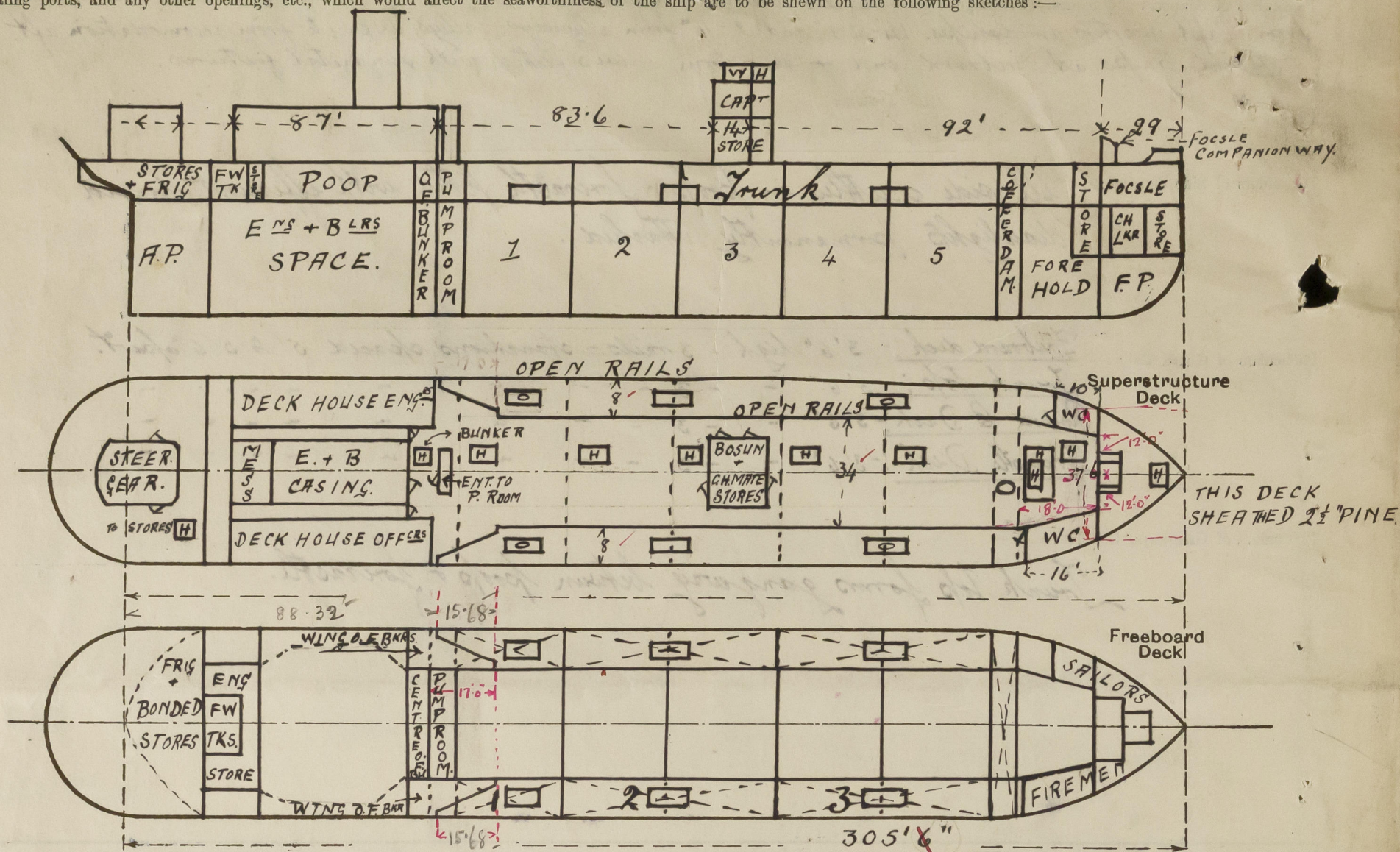
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	Open rails between poop & forecastle. ✓					
Forward Well						
State position of each freeing port { After Well :— (F. and A. position and height above deck edge) { Forward Well :—						
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								
Raised Quarter Deck Bulkhead	40	40	6" x 3" x 3	24"	Bk ⁵	✓	✓	✓
Bridge, After Bulkhead	38	34	3" x 3" x 3	24" 1/36"	Bk ⁶	1-5' x 3'	18"	22'6"
Bridge, Forward Bulkhead	38	34	3" x 3" x 3	24" 1/36"	Bk ⁶	1-5' x 2'	18"	"
Forecastle Bulkhead	40	34	5" x 3" x 38	24"	Bk ⁶	✓	18"	7'6"
Trunk, Aft	44	34	3" x 3" x 4	25 1/2"	Bk ⁶	✓	✓	6'3 1/4"
Trunk, Forward	44	34	3" x 3" x 4	25 1/2"	Bk ⁶	✓	✓	6'3 1/4"
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	40	34	4" x 2.5" x 3	24"	Bk ⁶	3-4'6" x 2'3"	18"	7'6"
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 openings
STEERING ENGINE DECK HOUSE	
Raised Quarter Deck Bulkhead	2-steel doors, 5' x 2' x 18" sill capable of being manipulated from both sides
Bridge, After Bulkhead To store	1-steel door 5' x 3' x 18" sill
Bridge, Forward Bulkhead	1- " 5' x 2' x 18" sill
Forecastle Bulkhead	1-steel door 5'6" x 2'1" x 13" sill
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	2-steel doors 5' x 2' x 18" sill
Exposed Machinery Casings on Superstructure Decks	3-steel doors 4'6" x 2'3" x 18" sill
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Two portable steel doors for bonnage opening aft 4'6" x 3'0" x 24" sill, can be readily fitted in emergency + held by 10 hook bolts each. All doors within superstructures in good condition + capable of being manipulated 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 shown on the following sketches:—



$$15.68 \times 41.67 = 653.4$$

$$15.40 \times 34.0 = 5237.0$$

$$13.15 \times 30.0 = 394.5$$

$$50.08 \times 6284.9 = 314849.5$$

$$125.5$$

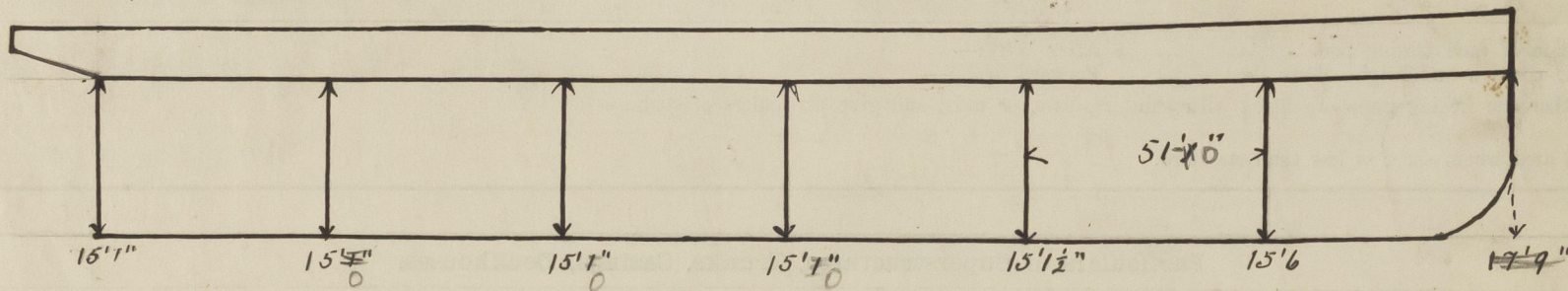
$$\text{Hoch Equip. Pkt.} = 29.00$$

$$\text{Length of Pkt.} = 4.85$$

$$\text{Distribution} = \frac{26 \times 7}{37.5} = 4.85$$

$$33.85 = \text{equip. length.}$$

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



$$\text{Keel } 1\frac{1}{8} \quad 85\% \text{ mild D} = 12.75' = 12-10\frac{1}{2} \text{ BK of } \Delta^c \text{ Scale but } \Delta^c = 4686 = 4663 \text{ mild.}$$

Builder's name and yard number Hawaldtwerke A.G. Kiel Yard No 690

Names of sister ships None

Owners Curacaoische Schipv. Maats Curacao D.W.I.

Fee £ 150

Received by me



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