

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

Computation of Freeboard for Steamer, Sailing Ship, Tanker

having bridge and forecastle combined and poop

(Type of Superstructures.)

Port of Survey Bergen

Date of Survey 15th, 16th, 17th & 22nd Feb. 1940

Name of Surveyor L. A. Eide jr. & P. Eide

Particulars of Classification 100 A 1
Fitted for carrying whale oils or other oils in bulk having a F.P. above 150°F.

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
"MAFUTA" ex "RONALD"	Belgian Antwerp		6322	1920-7

Moulded Dimensions: Length 421'-6" Breadth 55'-6" Depth 31'-3 3/4"
 Moulded displacement at moulded draught = 85 per cent. of moulded depth 16,974 M.
 Coefficient of fineness for use with Tables .79 assumed

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... <u>9.543 M.</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>8.33(9.555 - 8.564) × 30 = +2.48 m/m</u>	Moulded Breadth (B) <u>55.88 ft. 16.974 M.</u>
Stringer plate ... <u>.01204' = .48"</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = <u>.991</u>	Standard Round of Beam = $\frac{B \times 12}{50} =$ <u>14"</u>
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures <u>✓</u>	Ship's Round of Beam = <u>14"</u>
Depth for Freeboard (D) = <u>9.555 M.</u>		Difference <u>Excess</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{17}{4} \cdot 0.460 =$ <u>Nie.</u>

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	<u>13.791 M</u>	<u>13.791</u>	<u>2.364 M</u>	<u>✓</u>	<u>13.791</u>	Standard Height of Superstructure <u>2290 m/m</u>
" overhang ...	<u>2.819 M</u>	<u>1.410</u>			<u>1.410</u>	" " R.Q.D. <u>✓</u>
R.Q.D. enclosed ...						Deduction for complete superstructure <u>1067. m/m</u>
" overhang ...			<u>2.364 M</u>	<u>✓</u>		Percentage covered $\frac{S}{L} =$ <u>97.75</u>
Bridge enclosed ...			<u>2.364 M</u>	<u>✓</u>		" " $\frac{S_1}{L} =$ <u>95.40</u>
" overhang aft ...						" " $\frac{E}{L} =$ <u>95.40</u>
" overhang forward ...	<u>2.78 M</u>		<u>2.414 M</u>	<u>✓</u>		Percentage from Table, Line A. and B. = <u>94.34</u>
F'cle enclosed ...	<u>102.560</u>	<u>102.560</u>	<u>7.92</u>	<u>✓</u>	<u>102.560</u>	(corrected for absence of forecastle (if required))
" overhang ...	<u>6.401</u>	<u>4.800</u>			<u>4.800</u>	Percentage from Table, Line B.
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than 2L (if required) <u>✓</u>
Tonnage opening aft ...						Deduction = <u>1067 × .9434 = 1007</u>
" " forward						
Total ...	<u>125.571</u>	<u>122.561</u>			<u>122.561</u>	

Sheers measured in floating dock

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	<u>1324</u>	1		<u>1324</u>	<u>1448 m/m</u>	<u>1448</u>	1		<u>1448</u>	Mean actual sheer aft = <u>Excess</u>
1/4 L from A.P. ...	<u>588</u>	4		<u>2352</u>	<u>648 m/m</u>	<u>648</u>	4		<u>2592</u>	Mean actual sheer forward = <u>Excess</u>
1/2 L " ...	<u>147</u>	2		<u>294</u>	<u>152 m/m</u>	<u>152</u>	2		<u>304</u>	Mean standard sheer forward
Amidships ...	-	4		-	0	-	4		-	Length of enclosed superstructure forward of amidships = <u>>.1</u>
3/4 L from F.P. ...	<u>294</u>	2		<u>588</u>	<u>305 m/m</u>	<u>305</u>	2		<u>610</u>	" " aft of " = <u>>.1</u>
1/4 L " ...	<u>1177</u>	4		<u>4708</u>	<u>1295 m/m</u>	<u>1295</u>	4		<u>5180</u>	
F.P. ...	<u>2648</u>	1		<u>2648</u>	<u>2896 m/m</u>	<u>2896</u>	1		<u>2896</u>	
Total ...				<u>11914</u>					<u>13030</u>	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{1116}{18} \left(.75 - \frac{.4887}{2} \right) = -16 \text{ m/m}$

If limited on account of midship superstructure. ✓

If limited to maximum allowance of 1 1/2 ins. per 100 ft. ✓

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)	1986
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient <u>.791.68 = 1.47/1.36</u>	2147
Depth to Freeboard Deck = <u>9.555</u>	$\Delta =$	Depth Correction ...	248
Summer freeboard = <u>1.372</u>	Tons per inch immersion at summer load water line	Deduction for superstructures ...	- 1007
Moulded draught (d) = <u>8.183</u>	T =	Sheer correction ...	- 16
Deduction for Tropical freeboard and addition for Winter freeboard = <u>d m/m = 171 m/m</u>	Deduction = $\frac{\Delta}{40 T}$ inches	Round of Beam correction ...	-
Addition for Winter North Atlantic Freeboard (if required) = <u>48</u>	$\frac{d}{48} = 171 \text{ m/m}$	Correction for Thickness of Deck amidships ...	-
		Other corrections, scantlings, etc. ...	-
		Summer Freeboard = <u>1372</u>	-775

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

Tropical Fresh Water Line above Centre of Disc ...	<u>342 mm</u>	Tropical Fresh Water Freeboard ...	<u>1030 m/m</u>
Fresh Water Line " " ...	<u>171</u>	Fresh Water " " ...	<u>1201 m/m</u>
Tropical Line " " ...	<u>171</u>	Tropical " " ...	<u>1201 m/m</u>
Winter Line below " " ...	<u>171</u>	Winter " " ...	<u>1543 m/m</u>
Winter North Atlantic Line " " ...	<u>✓</u>	Winter North Atlantic " " ...	<u>✓</u>

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PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway	N°1 on Forecastle	N°2 on Bridge dk.	N°3 on Bridge dk.	N°4 on Raised dk.	N°1 on Upper dk.	N°2 on Upper dk.	N°3 on Upper dk.	N°4 on Upper dk.	N°5 on Upper dk.	Hatch to P.
Dimensions of Hatchway	22'0" x 18'0"	22'0" x 18'0"	19'9" x 18'0"	14'9" x 16'0"	21'4" x 18'0"	26'13/4" x 18'0"	19'9" x 18'0"	16'10" x 18'0"	17'7" x 18'0"	3'6" x 3'6"
COAMINGS										
Height above Deck	30"	30"	30"	18"	9" 6"	9" 6"	9" 6"	9" 6"	30"	9"
Thickness	.40"	.40"	.40"	.40"	none	none	none	none	.40"	none
Sides	7'4" x 40"	7'4" x 40"	7'4" x 40"	7'4" x 40"	none	none	none	none	7'4" x 40"	none
Stiffeners	2 x 4" x 1/2"	2 x 4" x 1/2"	none	none	none	none	none	none	none	none
Brackets, Stays	7'4" x 1/2"	2 x 4" x 1/2"	none	none	none	none	none	none	none	none
HATCH BEAMS										
Number	4	5	3	2	4	5	3	2	3	3
Spacing	4'3" x 7/20"	Equal	Equal	Equal	4'3" x 9/20"	Equal	Equal	Equal	Equal	Equal
Scantling and Sketch	9'4" x 17'4" x 1/40"	as N°1	as N°1	as N°1	10'15" x 1/40"	as N°1	as N°1	as N°1	as N°1	as N°1
Bearing Surface	4'3" x 7/20"	as N°1	as N°1	as N°1	4'3" x 9/20"	as N°1	as N°1	as N°1	as N°1	as N°1
FORE AND AFTERS										
Number	4	5	3	2	4	5	3	2	3	3
Spacing	4'3" x 7/20"	Equal	Equal	Equal	4'3" x 9/20"	Equal	Equal	Equal	Equal	Equal
Unsupported Lengths	9'4" x 17'4" x 1/40"	as N°1	as N°1	as N°1	10'15" x 1/40"	as N°1	as N°1	as N°1	as N°1	as N°1
Scantling and Sketch	4'3" x 7/20"	as N°1	as N°1	as N°1	4'3" x 9/20"	as N°1	as N°1	as N°1	as N°1	as N°1
Bearing Surface	4'3" x 7/20"	as N°1	as N°1	as N°1	4'3" x 9/20"	as N°1	as N°1	as N°1	as N°1	as N°1
HATCH COVERS										
Material	wood	wood	wood	wood	wood	wood	wood	wood	wood	wood
Thickness	2 1/2"	2 1/2"	2 1/2"	2 3/4"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
How fitted	Fore and aft	Fore and aft	Fore and aft	Fore and aft	Fore and aft	Fore and aft	Fore and aft	Fore and aft	Fore and aft	Fore and aft
Bearing Surface	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"	3 1/2" x 4"
Spacing of Cleats	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
Number of Tarpaulins	2	2	2	2	2	2	2	2	2	2

Particulars of fiddle, funnel and ventilator coamings:—
 Funnel and ventilator coamings on casing top 7'-9" above bridge deck strongly constructed, in good condition. Fiddle openings fitted with hinged steel covers.

Particulars of Flush Bunker Scuttles:—

Particulars of Companionways:—On fore dk. 5'-2" x 4'-6" x 6'-11", steel, opening 3'-11 1/2" x 5'-0", sill 8". Double steel hinged doors.

On aft end of raised dk., entrance from poop dk. to space below raised dk. 3'-1 1/2" x 3'-1 1/2" x 25" above raised dk. opening 3'-4" x 4'-6", sill 16". opening closed by steel hinged doors, also fitted with lock bolts, 9" x 12" ap. Steel house, along N°3 hatchway, giving access to upper tween dk. 6'-0 1/2" x 5'-0" x 7'-0", opening 27' x 4'-10", hinged steel doors. Bolted pl. also fitted with 18" sill.

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

Forecastle and Bridge decks:
 1 - 10" x 33" x 20" to P.P.
 2 - 10" x 36 1/2" x 25" to acc. forward
 6 mushroom vents to acc.
 4 - 20 1/2" x 37 1/4" x 33" to holds
 2 - 5'1/2" x 32 1/4" x 25" —"
 2 - 10" x 37" x 25" —"
 16 - 12" x 36" x 20" —"
 Raised Deck:
 2 - 12" x 29" x 28" to holds
 4 - 12" x 24" x 28" —"
 Poop:
 5 - 12" x 10" x 23" to acc.
 1 - 14" x 34 1/2" x 30" —"
 19 mushroom vents to acc.

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

Forecastle deck. Six 3" - 6" above dk. one 2 1/4" - 24" above dk.
 Bridge deck. Two 3" - 6" — six 2 1/4" - 24" —
 Poop deck. Six 3" - 6" —
 all are fitted with closing appliances.

Particulars of Gangway Cargo and Coaling Ports:—

one cargo port, port side, in lower tween dk. Strongly constructed, efficiently closed by strong tanks.

Particulars of Scuppers and Sanitary Discharge Pipes — 4 scuppers, each side from upper deck, discharging just below deck. ✓

No sanitary discharges below upper deck, except W.C. discharge aft, discharging 50" below upper dk. Storm valve fitted. ✓
 Ash shoot discharging 5'-0" below upper dk.

Particulars of Side Scuttles: 3 side lights each side forward in store room below upper dk.

Guards fitted outside, as well as deadlights. ✓
 1 side light each side aft in store room below upper deck. deadlights fitted. ✓
 No deadlights fitted to side lights in fore-castle and poop. ✓

Particulars of Guard Rails:—

Guard rails on fore-castle and bridge dk. on top of bulwarks. ✓
 Stanchions 13" high, 4'-2" to 4'-8" apart. 1 rail. ✓

Particulars of Gangways, Lifelines, etc.:—

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	39' 9"	11' 9"	none		none	974 M ²
Forward Well	27' 8"	30"	36" x 18"	7	31.5 M ²	274 M ²

State position of each freeing port:—
 (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:—
 2 rails, 6" apart.

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	✓	30"	wood lining	33"	none	24" x 4'-9"	18"	7'-9"
Bulkhead at fore end of after well	✓	30"	3" flange and 5" x 3" x 45" new bars	33"	none	41" x 5'-0"	18"	11'-9"
Raised Quarter Deck Bulkhead								
Bridge, After Bulkhead								
Bridge, Forward Bulkhead		30"	6' x 3" x 45"	41"	brackets top and bottom	42" x 6'-8"	none	7'-9"
Fore-castle Bulkhead		30"	Flange plates 3" x 3 1/2" x 30"	39" - 45"	none	42" x 5'-0"	15 1/4"	7'-11"
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Free-board or Raised Quarter Decks								
Exposed Machinery Casings on Super-structure Decks			3" x 3" x 30"	29"	brackets at top and bottom	24" x 4'-10 1/4"	15"	7'-9"
Machinery Casings within Super-structures not fitted with Class I Closing Appliances			3" x 3" x 30"	29"	continuous above and below	25 1/2" x 4'-7"	16 1/2"	7'-9"
Deckhouses on Flush Deck Ships								

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

Poop Bulkhead	Wood door each side ordinary lock fast. ✓
Bulkhead at fore end of after well	Double steel door at middle. ordinary clips ✓ To open from both sides
Raised Quarter Deck Bulkhead	3" wood weather boards in channel, full length ✓
Bridge, After Bulkhead	✓
Bridge, Forward Bulkhead	✓
Fore-castle Bulkhead	none
Exposed Machinery Casings on Free-board or Raised Quarter Decks	one steel hinged door P. & S. to stokehold, and operated from both sides. ✓
Exposed Machinery Casings on Super-structure Decks	one steel hinged door P. & S. to engine room, and one steel hinged door port side to stokehold. ✓
Machinery Casings within Super-structures not fitted with Class I Closing Appliances	both sides
Deckhouses on Flush Deck Ships	

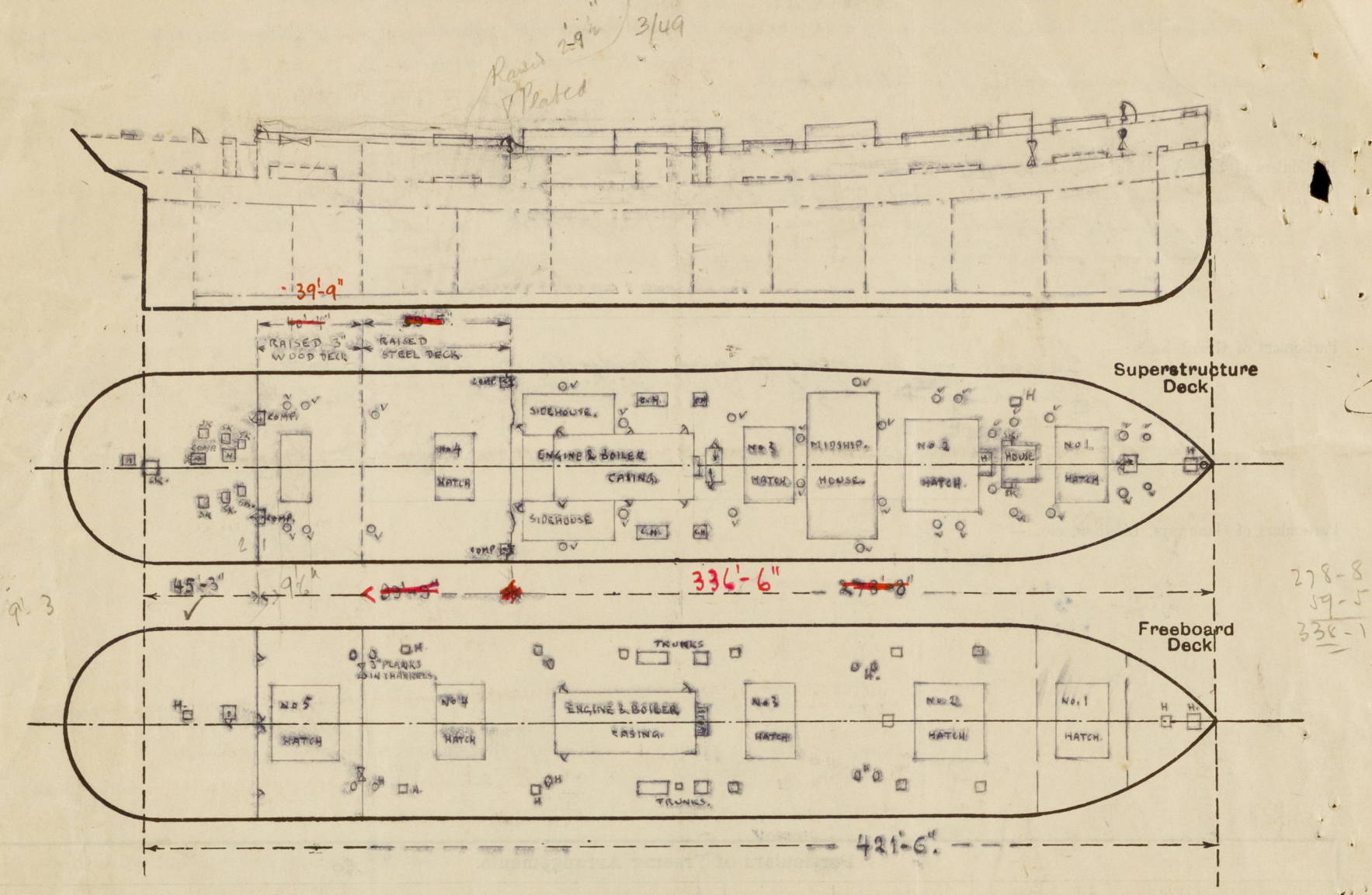
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Superstructure bulkheads, trunks, deckhouses, casings, cargo and coaling hatchways, extent and thickness of sheathing on the freeboard deck, gangway, cargo and coaling ports, and any other openings, etc., which would affect the seaworthiness of the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



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

The raised deck between bridge and poop is 4'-0" above bridge deck, and plated for 59'-5" up to old bridge after end bulkhead. Aft of this is 3" wood deck, with an opening 9'-6" x 16'-0", with 2 1/4" wood plank covers, no coaming.

Additional hatchways: Small hatch for end of No. 2 hatch 4'-3 1/2" x 6'-11 1/2" x 30", coaming 40", 2 1/2" wood covers, f. a. by 3" cleats sp. 24".

No. 1 coal hatch P.S. 4'-1" x 4'-0"; No. 2 P.S. 10'-8 1/2" x 4'-0". All 30" x 40" coamings, braked down to upper dk. 2 3/8" wood covers, athwartship bearing 3", cleats sp. 24"-29".

Hatch, port side of deck house forward 21' x 35' x 30", 40" coamings. 2 1/2" covers athwartship, bearing 3", cleats sp. 22".

Loop deck 1 hatch port side to hold, braked down to upper deck. 4'-0" x 4'-4 1/2" x 28' x 40". 2 1/4" covers athwartship, bearing 3", cleats sp. 28".

Hatch to poop store room: 34' x 37' x 9' x 30". 2 1/2" covers, athwartship, 2 1/2" beam, cleats sp. 22".

Upper deck: Hatch to claw locker 29 1/2' x 29 1/2' x 12 1/2' x 35". 2 1/4" covers athwartship, 3" bearing, cleats sp. 23".

Hatch inside poop to store room 36' x 36' x 18 1/2' x 30". Hinged wood cover 2 1/4", athwartship, 3" bearing, cleats sp. 19".

10 escape hatches, 18' x 12' x 9" coaming. Hinged steel cover with butterfly nuts.

12 " " 25' x 24' x 9" " " 2 1/4" wood covers, f. a., 2" bearing, cleats 14" apart.

Skylights on exposed decks strongly constructed, all fittings and closing arrangements in efficient condition.

Present N.V. Freeboards From Bridge deck at side From centre of dir.

Tropical " " " 8'-7 3/4" " " 7 1/4" above.

Summer " " " 10'-3" " " " " "

Winter " " " 10'-10 1/4" " " " " "

Allowance for fresh water for all freeboards 7 1/4".

Builder's name and yard number R. Duncan & Co. Ltd., Port Glasgow.

Names of sister ships

Owners Compagnie Maritime Belge (Lloyd Royal) Antwerp.

Fee £ 340.-

+ expenses kv. 5.-

Total kv. 345.-

Received by me

not yet charged.