

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

23786
10 JUL 1935

Computation of Freeboard for ^{MOTOR} Steamer, Sailing Ship, Tanker
having Poop, Bridge and Forecastle

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
M.S. <u>G.S. WALDEN</u> <u>London</u>	<u>British</u> <u>Hongkong</u>	<u>159441</u>	<u>10627</u>	<u>1935</u>

Port of Survey Rotterdam

Date of Survey Building

Name of Surveyor G. Vuyk

Particulars of Classification 100 A1
"Carrying Petroleum in Bulk"
"Longitudinal framing"
"Bracketless System" "Arc form"

Moulded Dimensions: Length 485.0 Breadth 74.83 Depth 37.0

Moulded displacement at moulded draught = 85 per cent. of moulded depth 22832 tons

Coefficient of fineness for use with Tables .700

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth <u>37.0</u>	(a) Where D is greater than Table depth (D - Table depth) R = <u>(37.04 - 32.33) 3 = + 14.22</u>	Moulded Breadth (B) <u>74.83</u>
Stringer plate <u>.073</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50} = \frac{74.83 \times 12}{50} = 17.96$
Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ <u>✓</u>	If restricted by superstructures	Ship's Round of Beam $\frac{15.96}{15.96} = 1.0$
Depth for Freeboard (D) = <u>37.04</u>		Difference <u>2.34</u>
		Restricted to
		Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{2.34}{4} \times .5976 = + .35$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed	<u>107.16</u>	<u>107.16</u>	<u>8.0</u>	<u>✓</u>	<u>107.16</u>
" overhang	<u>none</u>				
R.Q.D. enclosed	<u>✓</u>				
" overhang					
Bridge enclosed	<u>33.42</u>	<u>33.42</u>	<u>8.0</u>	<u>✓</u>	<u>33.42</u>
" overhang aft	<u>3.0</u>	<u>2.25</u>			<u>2.25</u>
" overhang forward	<u>3.0</u>	<u>1.50</u>			<u>1.50</u>
F'cle enclosed	<u>50.83</u>	<u>50.83</u>	<u>7.6</u>	<u>✓</u>	<u>50.83</u>
" overhang	<u>none</u>				
Trunk aft					
" forward					
Tonnage opening aft					
" " forward					
Total	<u>197.41</u>	<u>195.16</u>			<u>195.16</u>

Standard Height of Superstructure 7.50

" " R.Q.D. ✓

Deduction for complete superstructure 42.00

Percentage covered $\frac{S}{L} = \frac{195.16}{485.0} = 40.24$

" " $\frac{S_1}{L} = \frac{195.16}{485.0} = 40.24$

" " $\frac{E}{L} = \frac{195.16}{485.0} = 40.24$

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

Percentage from Table, Line B. Tanker 31.24
(corrected for absence of forecastle (if required))

Interpolation for bridge less than 2L (if required)

Deduction = 42.00 \times 31.24 = - 13.12

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	Mean actual sheer aft =	Mean standard sheer aft =
A.P.	<u>58.50</u>	<u>1</u>	<u>✓</u>	<u>58.50</u>	<u>81.75</u>	<u>81.75</u>	<u>1</u>	<u>✓</u>	<u>81.75</u>	<u>Excess</u>	
$\frac{1}{2}$ L from A.P.	<u>26.03</u>	<u>4</u>	<u>✓</u>	<u>104.12</u>	<u>38.75</u>	<u>38.75</u>	<u>4</u>	<u>✓</u>	<u>155.00</u>	<u>Excess</u>	
$\frac{2}{3}$ L "	<u>6.43</u>	<u>2</u>	<u>✓</u>	<u>12.86</u>	<u>10.0</u>	<u>10.00</u>	<u>2</u>	<u>✓</u>	<u>20.00</u>		
Amidships	<u>✓</u>	<u>4</u>	<u>✓</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>4</u>	<u>✓</u>	<u>-</u>		
$\frac{2}{3}$ L from F.P.	<u>12.84</u>	<u>2</u>	<u>✓</u>	<u>25.74</u>	<u>15.0</u>	<u>15.00</u>	<u>2</u>	<u>✓</u>	<u>30.00</u>		
$\frac{1}{2}$ L "	<u>52.04</u>	<u>4</u>	<u>✓</u>	<u>208.28</u>	<u>56.75</u>	<u>56.75</u>	<u>4</u>	<u>✓</u>	<u>227.00</u>		
F.P.	<u>114.00</u>	<u>1</u>	<u>✓</u>	<u>114.00</u>	<u>124.0</u>	<u>124.00</u>	<u>1</u>	<u>✓</u>	<u>124.00</u>		
Total				<u>526.50</u>					<u>637.75</u>		

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{111.25}{18} \times (.75 - .2035) = - 3.38$

If limited on account of midship superstructure. ✓

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

Mean actual sheer aft = Excess

Mean standard sheer aft = Excess

Length of enclosed superstructure forward of amidships = L

" " aft of " = L

Does not apply.

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Flush Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient
Depth to Freeboard Deck = <u>37.04</u>	$\Delta = \frac{218.12}{40} = 5.45$	$\frac{.700 + .68}{1.36} = .76$
Summer freeboard = <u>6.94</u>	Tons per inch immersion at summer load water line	Depth Correction <u>14.22</u>
Moulded draught (d) = <u>30.13</u>	T = <u>71.1</u>	Deduction for superstructures <u>13.12</u>
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{\Delta}{4}$ inches = <u>7.53</u>	Deduction = $\frac{\Delta}{40}$ inches = <u>7.64</u>	Sheer correction <u>3.38</u>
Addition for Winter North Atlantic Freeboard (if required) = <u>4.85</u>		Round of Beam correction <u>.35</u>
		Correction for Thickness of Deck amidships <u>-</u>
		Other corrections, scantlings, etc. <u>-</u>
		Summer Freeboard = <u>83.21</u>

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

Tropical Fresh Water Line above Centre of Disc	<u>15.4</u>	Tropical Fresh Water Freeboard	<u>5'-8"</u>
Fresh Water Line " "	<u>7.4</u>	Fresh Water " "	<u>6'-3.5"</u>
Tropical Line " "	<u>7.4</u>	Tropical " "	<u>6'-3.5"</u>
Winter Line below " "	<u>7.4</u>	Winter " "	<u>7'-6.4"</u>
Winter North Atlantic Line " "	<u>12.4</u>	Winter North Atlantic " "	<u>7'-11.4"</u>

12 JUL 1935

20 FEB 1935

Lloyd's Register
Foundational 18 JUL 1935

PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway			Oil tight hatches on freeboard deck. -						
Dimensions of Hatchway			Main Cargo tanks.				Summer tanks.		
COAMINGS	{	Height above Deck	7'0" x 4'0" /				7'0" x 4'0" /		
		Thickness { Sides	coaming				coaming		
		Stiffeners	32 x .44				32 x .44		
		Brackets, Stays							
HATCH BEAMS	{	Number	Forewell				Forewell		
		Spacing	8 hatches.				4 hatches		
		Scantling and Sketch	Afterwell				Afterwell		
			10 hatches.				6 hatches.		
		Bearing Surface							
FORE AND AFTERS	{	Number							
		Spacing							
		Unsupported Lengths							
		Scantling* and Sketch							
		Bearing Surface							
HATCH COVERS	{	Material	steel				steel		
		Thickness	.44				.44		
		How fitted	efficiently stiffened and hinged						
		Bearing Surface							
Spacing of Cleats			Screw down turnbuckle bolts or toggles						
Number of Tarpaulins			7/8" in dia. spaced 16" apart.						
*Are wood fore and afters steel shod at all bearing surfaces?			none fitted						
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 fiddle, funnel and ventilator coamings:— Fiddle casing, funnel and ventilators in efficient condition motorroom skylight all steel with steel flaps strongly constructed. - ✓

Particulars of Flush Bunker Scuttles:— none fitted. ✓

Particulars of Companionways:— One steel Companion way on freeboard deck in forewell 10'0" x 22'9" x 7'9" high leading to forward pump room with two steel hinged watertight doors on after side 5'0" x 2'6" self 20" capable of being operated from both sides. - ✓
One steel Companion way on freeboard deck in afterwell 10'0" x 22'9" x 8'0" high leading to after pump room with two steel hinged watertight doors on after side 5'0" x 2'6" self 20" capable of being operated from both sides. - ✓

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—
on forecastle deck 3 vents 16" dia. coaming 36" x .36 led to forepeak and enclosed forecabin ✓
on freeboard deck 2 " 24" " " 15'0" x .42 led to forward pump room, well supported ✓
on bridge deck 4 " 8" " " 30" x .32 led to enclosed bridge space. ✓
on poop deck 7 " 8" " " 33" x .32 } led to enclosed poop space, motor room ✓
1 " 12" " " 30" x .34 } and two side decks. - ✓
1 " 16" " " 30" x .36 }
1 " 20" " " 30" x .36 }

all ventilators constructed in accordance with the Rules and coamings closed with wood plugs and canvas covers. -
Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—
on forecastle deck 2 air pipes 4" dia. x 12' high fitted with patent gascap - from deep tank.
on freeboard deck 4 " " 6" dia. x 12'0" high fitted with patent gascap - from bunkers and settling tanks.
on poop deck 1 " " 5" dia. x 18' high - from afterpeak fitted with wood plugs. ✓
Canvas covers are provided for all air pipes. -
Air pipes from main cargo tanks and sumbertanks led up to fore and mainmast tops. -

Particulars of Gangway Cargo and Coaling Ports:— none fitted. - ✓



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Forewell - 2 scuppers cut through stringer angle & one scupper pipe at bridge front. ✓
 Particulars of Scuppers and Sanitary Discharge Pipes —
 Afterwell - 3 scuppers cut through stringer angle & two scupper pipes at bridge end and
 poop front. — ✓
 Sanitary discharge pipes from:
 forecabin space - start: one 3"; port one 3" discharge.
 bridge houses - start: one 5"; port one 5" discharge.
 poop space - start: one 3"; port one 3" discharge.
 start: three 2 1/2"; port two 2 1/2" discharges
 start: one 4"; port five 4" discharges
 port one 5" discharge } All sanitary discharges fitted below
 feetboard deck with cast steel valve chest
 and metal stormvalves at ship's side and
 stop valves for closing same. ✓

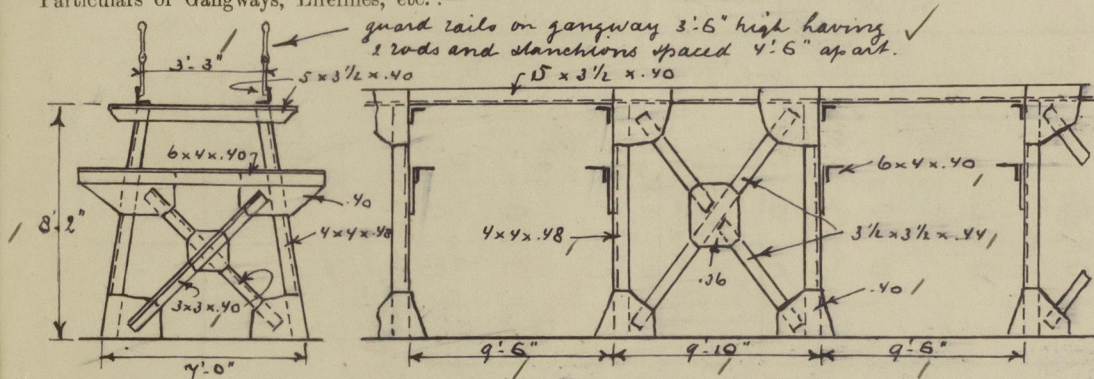
Particulars of Side Scuttles:

Side scuttles to forecabin space, to accommodation in poop and below feetboard deck
 in way of poop are all of substantial construction and fitted with permanently
 attached dead lights. —
 Lowest point of sidelights below feetboard deck 4'0" below feetboard deck diameter 18" ✓

Particulars of Guard Rails:—

Guard rails on feetboard deck - 3'6" high having 3 rods and stanchions spaced 4'9" apart. ✓
 on forecabin deck - 3'6" " " 3 " " " 5'6" apart. ✓
 on poop deck - 3'9" " " 3 " " " 4'10" apart. ✓
 steel bulwarks on bridge deck 3'6" high efficiently constructed and supported. ✓

Particulars of Gangways, Lifelines, etc.:—



Gangway extending from poop deck
 over pump room companion to bridge deck
 and from bridge deck over pump room
 companion to forecabin deck constructed
 as per sketch. —
 Supports spaced 9'6" to 10'0" apart.
 Cross ties fitted in each support and
 longitudinal ties fitted between alter-
 nate supports on both sides. — ✓

Particulars of Freeing Arrangements.

	Length of ^{WELL} Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
After Well	173'-3"		open rail. ✓			
Forward Well	120'-6"		open rail. ✓			
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.						

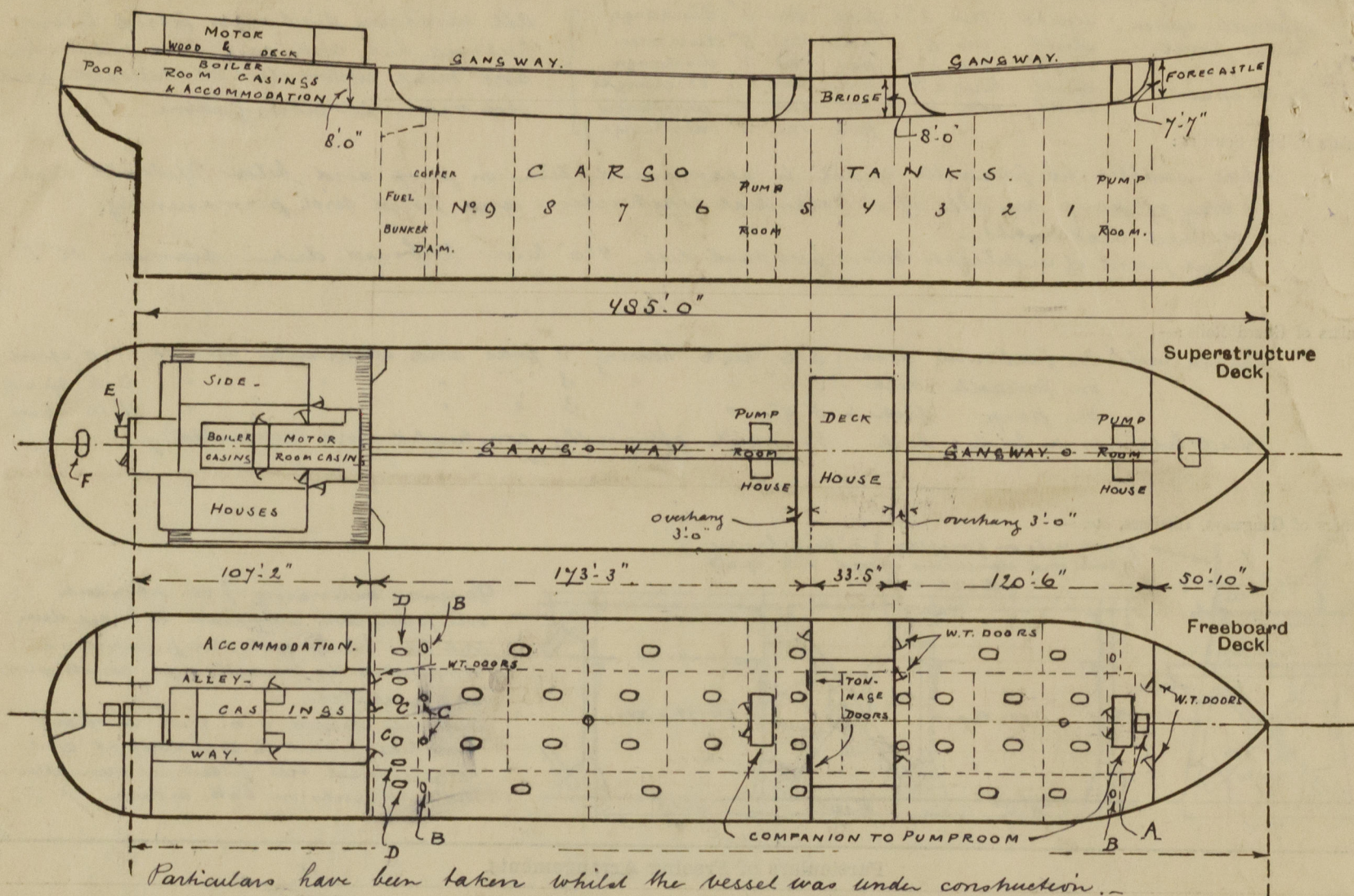
Particulars of Superstructures, Trunks, Casings, Deckhouses.

	Coaming	Plating	Stiffeners	Spacing	End Attachments of Stiffeners	Size of Openings	Height of Sills	Height of Casings
Poop Bulkhead	6'6" x .44 ✓	.50 ✓	12 x 3 1/2 x .52 BA ✓	36" ✓	brackets top & bottom ✓	3 off 5'0" x 2'6" ✓	19" ✓	8'0" ✓
Raised Quarter Deck Bulkhead ... ✓								
Bridge, After Bulkhead	10'4" x .52 ✓	.36 ✓	4 x 3 x .40 A ✓	30" ✓	3 stiff at center brackets top & bottom ✓	2 off 4'3" x 3'2" ✓ 1 off 5'0" x 2'6" ✓	24" ✓ 19" ✓	8'0" ✓
Bridge, Forward Bulkhead	10'4" x .52 ✓	.50 ✓	10 x 3 1/2 x .50 BA ✓	38" ✓	brackets top & bottom ✓	3 off 5'0" x 2'6" ✓	20" ✓	8'0" ✓
Forecabin Bulkhead	10'4" x .40 ✓	.32 ✓	6 x 3 x .34 BA ✓	30" ✓	none ✓	2 off 5'0" x 2'6" ✓	20" ✓	7'-7" ✓
Trunk, Aft	✓							
Trunk, Forward	✓							
Exposed Machinery Casings on Free-board or Raised Quarter Decks ... ✓								
Exposed Machinery Casings on Super-structure Decks34 ✓	.32 ✓	4 x 1 1/2 x .32 ✓	27" ✓	brackets on top only ✓	5'6" x 2'0" ✓	13" ✓	8'10" ✓
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	steel hinged watertight doors operated from both sides. — ✓
Raised Quarter Deck Bulkhead ... ✓	
Bridge, After Bulkhead	steel portable plates .40" fastened with 1" hookbolts spaced ± 14" apart. — one steel hinged watertight door operated from both sides. ✓
Bridge, Forward Bulkhead	steel hinged watertight doors operated from both sides. — ✓
Forecabin Bulkhead	steel hinged watertight doors operated from both sides. — ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ... ✓	
Exposed Machinery Casings on Super-structure Decks	steel hinged non watertight doors in alley way operated from both sides. — ✓
Machinery Casings within Superstructures 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:—



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

Small hatches on upperdeck A-5'10" x 9'8"-coaming 32"x.44" stiffeners 8"x3"x.40 BA' closed with steel cover. 40 fastened with toggles 3/4" spaced 30"
 B-24"x18" manholes, coaming 6" angle. closed with steel cover fastened with toggles ✓
 C-24" dia. coaming 23"x.40 closed with steel lid, fastened with toggles ✓
 D-4'2" x 2'3"-oval, coaming 33"x.40, closed with steel cover fastened with toggles 7/8 spaced 16" apart
 on poopdeck. E-2'10" x 2'10"- coaming 31" closed with steel cover down cover. ✓
 F-5'6" x 3'4"- oval, coaming 33"x.40 closed with steel cover fastened with toggles ✓

Moulded Displacements at moulded draughts.			
MLD. DRAUGHT.	MLD. DISPLACEMENT IN TONS. S.W.	TONS PER INCH	MLD DISPLACEMENT IN M3.
30'- 9 3/8"	22262.	71.3	22066.
31'- 1 3/8"	22547.	71.4	22349.
31'- 5 3/8"	22832.	71.5	22631.
31'- 9 3/8"	23118.	71.6	22915.
32'- 1 3/8"	23404.	71.7	23198.

Builder's name and yard number Rotterdamse Dredde Maatschappij Yard number 189.

Names of sister ships

Owners The Oriental Tankers Ltd. Hongkong

Fee of 240.00 will be Received by me [Signature]

