

Lloyd's Register of Shipping.  
SURVEYS FOR FREEBOARD.247  
23 DEC 1931

Computation of Freeboard for Steamer, Sailing Ship, Tanker					Port of Survey <u>Newcastle</u>
having <u>Poop &amp; Forecastle</u>					Date of Survey <u>15<sup>th</sup>, 18<sup>th</sup> &amp; 21<sup>st</sup> Dec 1931</u>
(Type of Superstructures.)					Name of Surveyor <u>Alex. E. Stevenson</u>
Ship's Name <u>TRIGONIA</u>	Nationality and Port of Registry <u>British London</u>	Official Number <u>137509</u>	Gross Tonnage <u>7496</u>	Date of Build <u>1916</u>	Particulars of Classification <u>100 A.1</u>
Moulded Dimensions: Length <u>440.0'</u> Breadth <u>54.0'</u> Depth <u>36.5'</u> <u>16580</u> <u>31/12/31</u>					Carrying Petroleum in bulk. Longitudinal Framing.
Moulded displacement at moulded draught = 85 per cent. of moulded depth <u>16442</u> tons					
Coefficient of fineness for use with Tables <u>.781</u> <u>.787</u> <u>.8</u> <u>31.02</u>					

Depth for Freeboard (D)	Depth correction	Round of Beam correction
Moulded depth ... .. <u>36.5</u>	(a) Where D is greater than Table depth (D - Table depth) R = ( <u>36.55</u> - <u>29.33</u> ) <u>3</u> + <u>21.66</u>	Moulded Breadth (B) <u>54.0'</u>
Stringer plate ... .. <u>.05</u>	(b) Where D is less than Table depth (if allowed) (Table depth - D) R =	Standard Round of Beam = $\frac{B \times 12}{50}$ = <u>12.96</u>
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$	If restricted by superstructures	Ship's Round of Beam = <u>13.50</u>
Depth for Freeboard (D) = <u>36.55</u>		Difference <u>.54</u>
		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L})$ = $\frac{.54}{4} \times .512$ = <u>-.07</u>

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ... ..	<u>120.0'</u>	<u>120.0'</u>	<u>8.0'</u>	<u>✓</u>	<u>120.0'</u>
" overhang ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
R.Q.D. enclosed ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
" overhang ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Bridge enclosed ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
" overhang aft ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
" overhang forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
F'cle enclosed ... ..	<u>92.9'</u>	<u>92.9'</u>	<u>8.0'</u>	<u>✓</u>	<u>92.9'</u>
" overhang ... ..	<u>3.6'</u>	<u>1.8'</u>	<u>✓</u>	<u>✓</u>	<u>1.8'</u>
Trunk aft ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
" forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Tonnage opening aft ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
" forward ... ..	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>
Total ... ..	<u>216.5'</u>	<u>214.4'</u>			<u>214.4'</u>

Standard Height of Superstructure	<u>7.5'</u>
" " R.Q.D.	<u>✓</u>
Deduction for complete superstructure	<u>42.0</u>
Percentage covered $\frac{S}{L}$	<u>49.21</u>
" " $\frac{S_1}{L}$	<u>48.79</u>
" " $\frac{E}{L}$	<u>48.79</u>
Percentage from Table, Line A.	<u>✓</u>
(corrected for absence of forecastle (if required))	
Percentage from Table, Line B.	<u>39.79</u>
(corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction =	<u>42.0 x .3979 = 16.71</u>

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ... ..	<u>54.00</u>	<u>1</u>	<u>✓</u>	<u>54.00</u>	<u>26.00</u>	<u>26.00</u>	<u>1</u>	<u>✓</u>	<u>26.00</u>
$\frac{1}{2}$ L from A.P. ... ..	<u>24.03</u>	<u>4</u>	<u>✓</u>	<u>96.12</u>	<u>11.85</u>	<u>11.85</u>	<u>4</u>	<u>✓</u>	<u>47.40</u>
$\frac{2}{3}$ L " ... ..	<u>5.94</u>	<u>2</u>	<u>✓</u>	<u>11.88</u>	<u>2.96</u>	<u>2.96</u>	<u>2</u>	<u>✓</u>	<u>5.92</u>
Amidships ... ..	<u>-</u>	<u>4</u>	<u>✓</u>	<u>-</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>✓</u>	<u>0</u>
$\frac{2}{3}$ L from F.P. ... ..	<u>11.88</u>	<u>2</u>	<u>✓</u>	<u>23.76</u>	<u>8.10</u>	<u>8.10</u>	<u>2</u>	<u>✓</u>	<u>16.20</u>
$\frac{1}{2}$ L " ... ..	<u>48.06</u>	<u>4</u>	<u>✓</u>	<u>192.24</u>	<u>32.40</u>	<u>32.40</u>	<u>4</u>	<u>✓</u>	<u>129.60</u>
F.P. ... ..	<u>108.00</u>	<u>1</u>	<u>✓</u>	<u>108.00</u>	<u>75.00</u>	<u>75.00</u>	<u>1</u>	<u>✓</u>	<u>75.00</u>
Total ... ..				<u>486.00</u>					<u>300.12</u>

$$\text{Correction} = \frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{185.88}{18} \left( .75 - \frac{246}{440} \right) + 5.20 = 5.20$$

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 = 36.55  
Summer freeboard = 7.356  
Moulded draught (d) = 29.22

Deduction for Tropical freeboard and addition for  
Winter freeboard =  $\frac{d}{4}$  inches = 7.30  
Addition for Winter North Atlantic Freeboard (if required) = 4.40

Deduction for Fresh Water.

Displacement in salt water at summer load water line 16580  
 $\Delta = 15480 - 15510$   
Tons per inch immersion at summer load water line  
 $T = 50 - 48.9$   
Deduction =  $\frac{\Delta}{40T}$  inches  
= 7.74  
7.93

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient

	+	-
Depth Correction ... ..	<u>21.66</u>	<u>-</u>
Deduction for superstructures ... ..	<u>-</u>	<u>16.71</u>
Sheer correction ... ..	<u>5.20</u>	<u>-</u>
Round of Beam correction ... ..	<u>-</u>	<u>.07</u>
Correction for Thickness of Deck amidships ... ..	<u>-</u>	<u>-</u>
Other corrections, scantlings, etc. ... ..	<u>-</u>	<u>-</u>
	<u>26.86</u>	<u>16.78</u>

Summer Freeboard = 87.968828SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, Deck:—

Tropical Fresh Water Line above Centre of Disc	<u>15 1/4"</u>	<u>15 1/4"</u>
Fresh Water Line	<u>8"</u>	<u>7 3/4"</u>
Tropical Line	<u>7 1/4"</u>	<u>7 1/4"</u>
Winter Line below	<u>7 1/4"</u>	<u>7 1/4"</u>
Winter North Atlantic Line	<u>11 3/4"</u>	<u>11 3/4"</u>

Tropical Fresh Water Freeboard	<u>6"</u>	<u>6"</u>
Fresh Water	<u>6"</u>	<u>8 1/4"</u>
Tropical	<u>6"</u>	<u>8 1/4"</u>
Winter	<u>7"</u>	<u>11 1/2"</u>
Winter North Atlantic	<u>8"</u>	<u>5 3/4"</u>

MARKING FORM

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# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	...	...	...	ON F'de.		OIL CARGO HATCHES		SUMMER TANK HATCHES	
Dimensions of Hatchway	...	...	...	10'-0" x 14'-6"		4'-0" x 3'-9"		2'-3" x 2'-1"	
COAMINGS	Height above Deck	...	...	31"		angle		angle	
	Thickness	Sides	...	36"		8 1/2" x 3 1/2" x 50"		7" x 3 1/2" x 50"	
		Ends	...	36"					
	Stiffeners	...	...	✓					
	Brackets, Stays	...	...	✓					
HATCH BEAMS	Number	...	...	1					
	Spacing	...	...	7' Plank					
	Scantling and Sketch	...	...	2 1/2" x 34"					
		...	...	3" x 3" x 40"					
	Bearing Surface	...	...	3"					
FORE AND AFTERS	Number	...	...						
	Spacing	...	...						
	Unsupported Lengths	...	...	none					
	Scantling* and Sketch	...	...						
	Bearing Surface	...	...						
HATCH COVERS	Material	...	...	wood.		steel		steel	
	Thickness	...	...	2 1/2"		50"		50"	
	How fitted	...	...	Score & aft					
	Bearing Surface	...	...	3"					
Spacing of Cleats	...	...	...	2'-0"		18"		18"	
Number of Tarpaulins	...	...	...	Two					

\*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? F'de hatch. 2 or 2 1/2" x 1/2" steel transverse battens, fixed down by connection to hatch side.

Particulars of fiddle, funnel and ventilator coamings:—

1 hinged steel flap closed by butterfly nuts 30" apart.

Particulars of Flush Bunker Scuttles:—

✓

Particulars of Companionways:—

Companion on F'de 3'-2" x 4'-6"  
 Coaming 15" x 25"  
 Hinged steel top 25"  
 closed by 8 butterfly nuts.

Companion on Poop. 2'-6" x 5'-0"  
 Coaming 9" x 35"  
 Hinged steel top 40"  
 closed by 10 butterfly nuts.

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

See attached sheet of particulars.

Ventilators closed with wood plugs canvas covers.

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

on F'de deck.

1 or 39" x 6" dia.  
 2 Goosenecks 20" (no bend) x 4 1/2" dia. with snifting holes.

on Poop Deck.

2 Goosenecks 15" x 4" dia.  
 2 " 15" x 2 1/2" "  
 1 " 26" x 3" "  
 1 " 19" x 2 1/2" "  
 2 air pipes 30" x 3" "

Air pipes closed with wire gauge canvas covers.

Particulars of Gangway Cargo and Coaling Ports:—

✓



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Particulars of Scuppers and Sanitary Discharge Pipes —

In way of F'cle  
P. 1 off.  
S. 4 off.

In way of Poop.  
P. 5 off.  
S. 11 off.

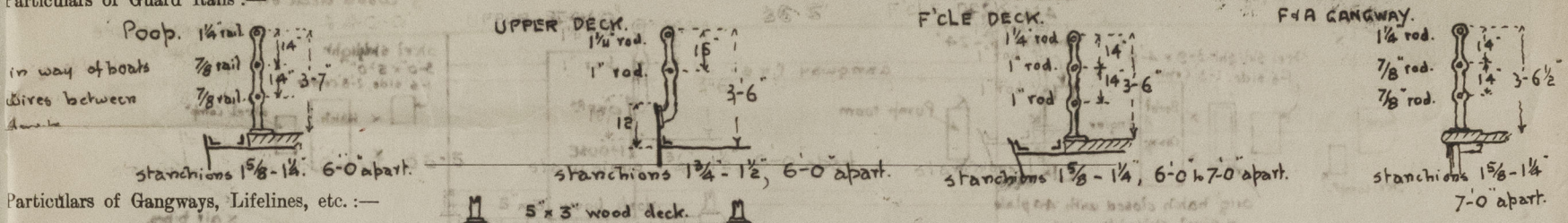
In way of Poop 5 scuppers are fitted with screw down valves.  
Remainder of scuppers have brass storm valves.  
pipes wrought iron.

Upper deck Scuppers. 6 off P's. hole 5"x3 1/2" in gunwale bar & sheerstrake.

Particulars of Side Scuttles:

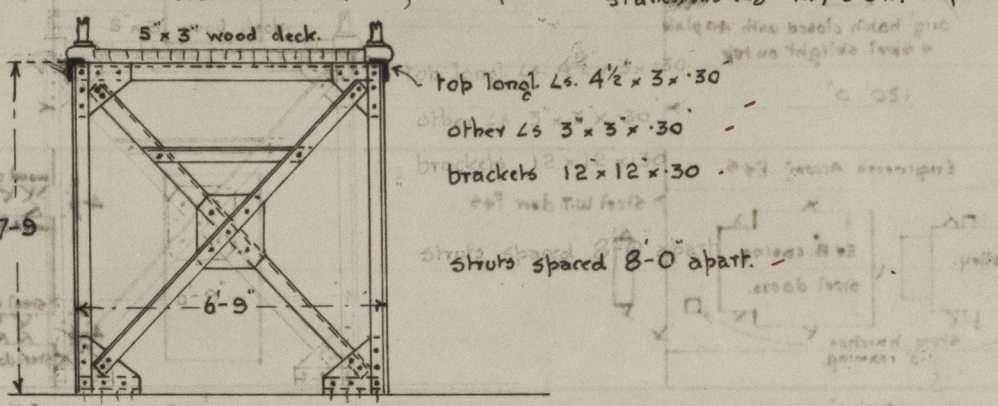
In way of Poop & F'cle  
in Superstructures 12" dia. with hinged deadlights.  
below upper deck. 12" " " (bottom of sidelight 2'-3" below upper deck.)

Particulars of Guard Rails:—



Particulars of Gangways, Lifelines, etc.:-

Fore & aft gangways P & S.  
between Poop & F'cle.



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 ... ..	92'9"	8'-0"	Open rails between Poop & F'cle			
Forward Well ... ..	3'-6"					

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 ... ..	4'-4"	4'-0"	9 1/2 x 3 1/2 x 70 B's.	2'-0"	Bkts. top & btm.	5'-6" x 3'-0"	18"	7'-9"
Raised Quarter Deck Bulkhead ...	✓							
Bridge, After Bulkhead ... ..	✓							
Bridge, Forward Bulkhead ... ..	✓							
Forecastle Bulkhead ... ..	✓	30" & 25"	3 x 3 x 35 & 3 1/2 x 3 x 35	30" & 33"	Trans Bhd. 5'-0" x 2'-6" aft spaces 5'-2" x 2'-0"		15" 12"	7'-9"
Trunk, Aft ... ..								
Trunk, Forward ... ..								
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...								
Exposed Machinery Casings on Super-structure Decks ... ..	3'-5"	3'-0" 3'-2"	3 x 2 1/2 x 35 3 x 2 1/2 x 30	28" 26"	alternate bkts. at top bkts. at btm.			2'-6" 10'-0"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..								
Pump room Deckhouses on Flush Deck Ships ...	✓	25"	3 1/2 x 2 1/2 x 35	36"	Fore end bkts at top & btm.	5'-6" x 2'-3"	18"	8'-0"

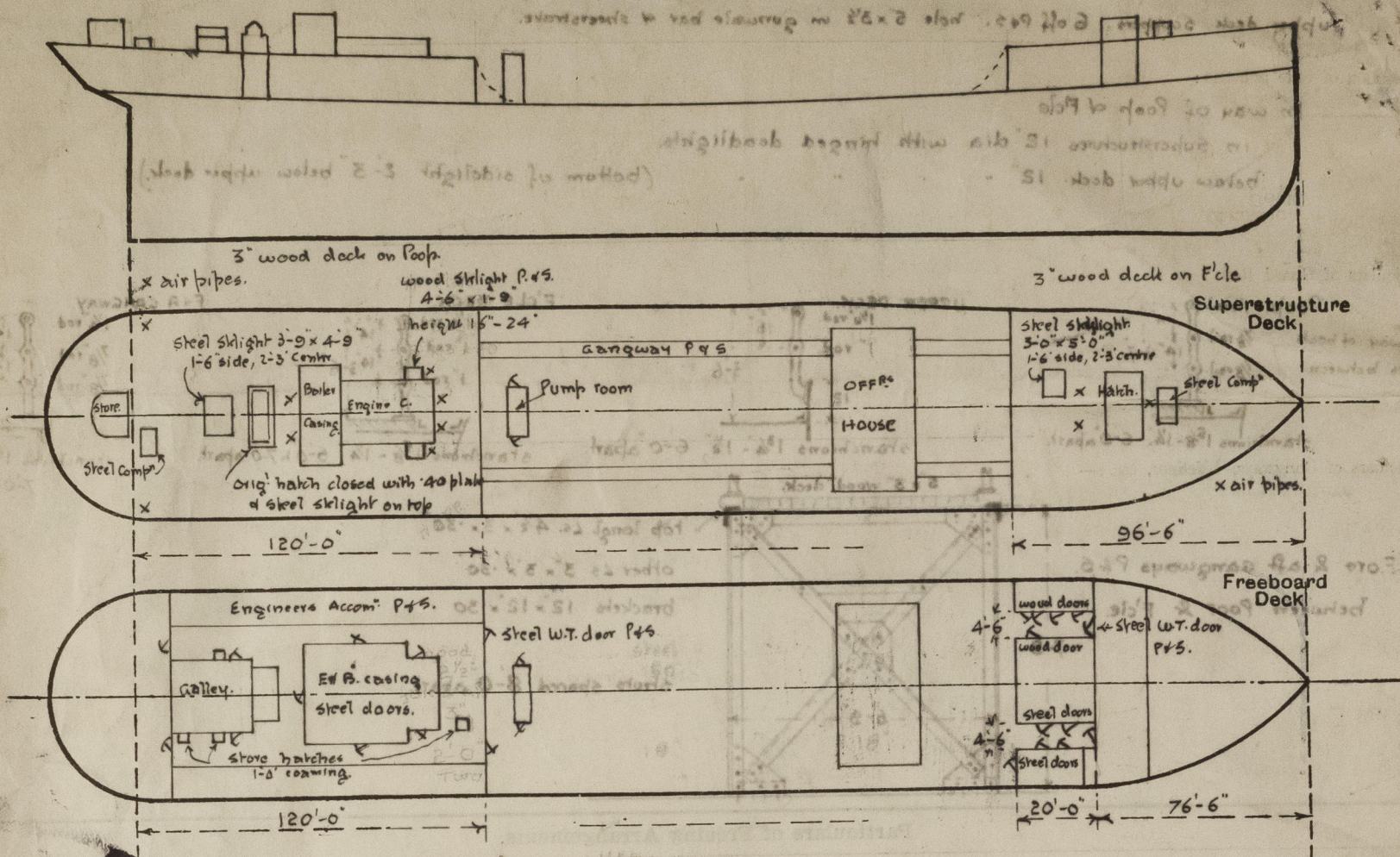
Particulars of Closing Appliances (state if capable of being manipulated from both sides).

Poop Bulkhead ... ..	Hinged steel W.T. door P & S. manipulated by clips from both sides. ✓
Raised Quarter Deck Bulkhead ...	
Bridge, After Bulkhead ... ..	
Bridge, Forward Bulkhead ... ..	
Forecastle Bulkhead ... ..	Transverse Bulkhd. Hinged Steel W.T. door P & S. manipulated by clips from both sides. In aft wing & centre spaces steel & wood doors, with clips or locks & handles. ✓
Exposed Machinery Casings on Free-board or Raised Quarter Decks ...	
Exposed Machinery Casings on Super-structure Decks ... ..	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances ... ..	
Pump Room Deckhouses on Flush Deck Ships ...	Hinged steel W.T. door P & S. manipulated by clips from both sides. ✓



*Vigonia*

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:—



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

$$85\% \text{ of M.D. (36.5')} = 31.02'$$

Load Displ. @ 33' 0" Draught = 15,810, from Displ. Scale supplied by the Owner

Tons per inch = 50 Tons

Load Displ. @ 31.02' + (17' Knt) = 31.19' = 16,524 Tons. omit

Net Displ. @ 31.02' = 16,442 "

Builder's name and yard number

Names of sister ships

Owners *Anglo-Saxon Petroleum Co. Ltd.* omit

Fee, £ *15 6 0*

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