

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

28 JUL 1932

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~  
having *Roop. Bridge & Forecastle.*

Port of Survey *Falmouth.*

Date of Survey *26. 7. 32*

Name of Surveyor *Arch. Murray.*

Particulars of Classification *80/100 A.1.*

*Carrying petroleum in bulk.*  
*SS. Bkr. No. 3-5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100.*

*KELLIOLA*

(Type of Superstructures.)

Ship's Name *SAN FIRSO* Nationality and Port of Registry *British London.* Official Number *135267.* Gross Tonnage *6206* Date of Build *1913*

Moulded Dimensions: Length *420.6* Breadth *54.29* Depth *32.70*  
Moulded displacement at moulded draught = 85 per cent. of moulded depth *14,287.* tons  
Coefficient of fineness for use with Tables *.788*

Depth for Freeboard (D)

Depth correction

Round of Beam correction

Moulded depth ... *32.70*  
Stringer plate ... *.05*  
Sheathing on exposed deck  
 $T \left( \frac{L-S}{L} \right) =$

(a) Where D is greater than Table depth  
(D-Table depth) R = *(32.70-26.04)3*  
*472 x 3 = 14.16*  
(b) Where D is less than Table depth (if allowed)  
(Table depth-D) R =

Moulded Breadth (B) *54.29*  
Standard Round of Beam =  $\frac{B \times 12}{50} = \frac{13.03}{50}$   
Ship's Round of Beam = *13.5*  
Difference  
Restricted to  
Correction =  $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.47}{4} \times (.5954) = .07$

Depth for Freeboard (D) = *32.76*

If restricted by superstructures

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>e</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<i>102.00</i>	<i>102.00</i>	<i>7.5</i>		<i>102.00</i>
" overhang ...					
R.Q.D. enclosed ...	<i>1</i>				
" overhang ...					
Bridge enclosed...	<i>25.50</i>	<i>25.50</i>	<i>7.5</i>		<i>25.50</i>
" overhang aft ...					
" overhang forward	<i>42.06</i>	<i>42.06</i>	<i>7.12</i>	<i>7.83</i>	<i>49.35</i>
Fore enclosed ...	<i>42.25</i>	<i>.60</i>	<i>7.12</i>	<i>7.83</i>	<i>59.59</i>
" overhang ...	<i>1.19</i>				
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward					
Total ...	<i>170.75</i>	<i>170.16</i>			<i>169.42</i>

Standard Height of Superstructure *7.50*  
" " R.Q.D.  
Deduction for complete superstructure *42.00*  
Percentage covered  $\frac{S}{L} = \frac{40.60}{L}$   
" "  $\frac{S_1}{L} = \frac{40.46}{L}$   
" "  $\frac{E}{L} = \frac{139.28}{L}$   
Percentage from Table, Line A.  
(corrected for absence of forecastle (if required))  
Percentage from Table, Line B. *Tankers 34.28.*  
(corrected for absence of forecastle (if required))  
Interpolation for bridge less than .2L (if required)  
Deduction = *13.14*

### SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	<i>52.06</i>	<i>1</i>		<i>52.06</i>	<i>60.5</i>	<i>60.06</i>	<i>1</i>		<i>60.00</i>
$\frac{1}{4}$ L from A.P. ...	<i>23.76</i>	<i>4</i>		<i>92.64</i>	<i>25.</i>	<i>24.88</i>	<i>4</i>		<i>99.52</i>
$\frac{2}{4}$ L " ...	<i>5.73</i>	<i>2</i>		<i>11.46</i>	<i>6.2</i>	<i>6.22</i>	<i>2</i>		<i>12.44</i>
Amidships ...		<i>4</i>			<i>0.</i>		<i>4</i>		
$\frac{3}{4}$ L from F.P. ...	<i>11.45</i>	<i>2</i>		<i>22.90</i>	<i>13.</i>	<i>13.03</i>	<i>2</i>		<i>26.06</i>
$\frac{1}{4}$ L " ...	<i>46.33</i>	<i>4</i>		<i>185.32</i>	<i>52.</i>	<i>52.14</i>	<i>4</i>		<i>208.56</i>
F.P. ...	<i>104.12</i>	<i>1</i>		<i>104.12</i>	<i>117.5</i>	<i>117.00</i>	<i>1</i>		<i>117.00</i>
Total ...				<i>468.50</i>					<i>523.58</i>

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{468.50 - 523.58}{18} \left( .75 - \frac{.547}{2} \right) = 1.67$   
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 = *32.76*  
Summer freeboard = *6.02*  
Moulded draught (d) = *26.74*

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches = *6.68* = *6 $\frac{3}{4}$*   
Addition for Winter North Atlantic Freeboard (if required) = *4.80* = *4 $\frac{1}{4}$*

Deduction for Fresh Water.

Displacement in salt water at summer load water line  
 $\Delta = 13,769$   
Tons per inch immersion at summer load water line  
 $T = 45.71$   
Deduction =  $\frac{\Delta}{40T}$  inches = *7.52*

TABULAR FREEBOARD corrected for Flush Deck (if required)

	+	-
Depth Correction ...	<i>14.16</i>	
Deduction for superstructures ...		<i>13.54</i>
Sheer correction ...		<i>1.67</i>
Round of Beam correction...		<i>.07</i>
Correction for Thickness of Deck amidships ...		
Other corrections, scantlings, etc. ...		
	<i>14.16</i>	<i>14.88</i>

Summer Freeboard = *72.20*

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

Tropical Fresh Water Line above Centre of Disc ...	<i>14<math>\frac{1}{2}</math></i>	Tropical Fresh Water Freeboard ...	<i>4-10</i>
Fresh Water Line " " ...	<i>7<math>\frac{1}{2}</math></i>	Fresh Water " " ...	<i>5-4<math>\frac{3}{4}</math></i>
Tropical Line " " ...	<i>6<math>\frac{3}{4}</math></i>	Tropical " " ...	<i>5-5<math>\frac{1}{2}</math></i>
Winter Line below " " ...	<i>6<math>\frac{3}{4}</math></i>	Winter " " ...	<i>6-7</i>
Winter North Atlantic Line " " ...	<i>11.</i>	Winter North Atlantic " " ...	<i>6-11<math>\frac{1}{4}</math></i>

2 AUG 1932



### PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS											
			<i>Q.T.</i>	<i>Q.T.</i>	<i>Q.T.</i>	<i>W.T.</i>	<i>W.T.</i>	<i>W.T.</i>	<i>W.T.</i>	<i>W.T.</i>	<i>W.T.</i>
Description of Hatchway	...	...	<i>Forward</i>	<i>No. 1</i>	<i>Oil</i>	<i>Oil</i>	<i>Lumbers</i>	<i>Pump room</i>	<i>Pump room</i>	<i>Coffin</i>	<i>Coop</i>
Dimensions of Hatchway	...	...	<i>10' 0" x 3' 0"</i>	<i>10' 1" x 11' 0"</i>	<i>10' 0" x 9' 0"</i>	<i>6' 0" x 4' 0"</i>	<i>6' 0" x 3' 0"</i>	<i>2' 5" x 2' 5"</i>	<i>4' 4" x 6' 6"</i>	<i>7' 8" x 1' 9"</i>	<i>6' 0" x 2' 6"</i>
COAMINGS	Height above Deck	...	18"	20"	18"	18"	20"	20"	34"	6" 3/4"	30"
	Thickness	...	3"	3"	1 1/2"	4"	4"	3"	4"	3"	3"
	Stiffeners	...	3"	3"	4"	4"	4"	3"	4"	3"	3"
	Brackets, Stays	...	✓	✓	6 x 3 x 4	✓	✓	✓	✓	✓	✓
HATCH BEAMS	Number	...	✓	1	✓	✓	✓	✓	✓	✓	✓
	Spacing	...	✓	I	✓	✓	✓	✓	✓	✓	✓
FORE AND AFTERS	Unsuppported Lengths	...	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scantling and Sketch	...	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Bearing Surface	...	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Material	...	✓	✓	✓	✓	✓	✓	✓	✓	✓
HATCH COVERS	Thickness	...	2 1/4"	3"	4"	6"	5"	5"	5"	5"	5"
	How fitted	...	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"
	Bearing Surface	...	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"
	Spacing of Cleats	...	18"	22"	22"	22"	22"	22"	22"	22"	22"
Number of Tarpaulins	...	2	2	2	2	2	2	2	2	2	

\*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? *yes.*

*\* Steel covered in lieu of wood now being fitted to No. 1 Cargo Hatchway. To plan hereafter. Efficient steel covered now being fitted to forward pump room hatchway in lieu of wood.*

Particulars of fiddley, funnel and ventilator coamings:—

Stokehold gratings fitted with strong steel hinged covers.  
Fidley funnel and ventilators in efficient condition.  
Engide Room skylight of steel strongly constructed.

Particulars of Flush Bunker Scuttles:—

None.

Particulars of Companionways :—

None.

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

<u>Forecastle deck</u>	{ 1 @ 10' dead - running	20	1/4"	} 20 forecath bolt.	} Coatings of Cast iron & provided with wood plugs & canvas covers for rough weather protection.	
	{ 1 @ 15'	26	3/8"			
	{ 9 @ 7"	9	1/4"			
<u>Treenboard</u>	{ 1 @ 15'	36	3/8"			} 1 @ bolt summit stakes. port spec.
"	{ 10 @ 12"	9	1/4"			
<u>Poop</u>	{ 8 @ 7'	30	1/4"			
	{ 5 @ 12"					

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

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

<u>Forecastle deck</u>	30 2 1/2"	12'	high from oil fuel & keel ballast tanks.	} Heights measured to openings. Covers fitted to all openings in rough weather.
<u>Starboard</u>	{ 20 5"	20'	after dam port.	
	20 6"	40'	after.	
<u>Deck</u>	10 5"	15'	after fish tank.	
	20 1 1/2"	7'	water ballast tank.	

Particulars of Gangway Cargo and Coaling Ports :—

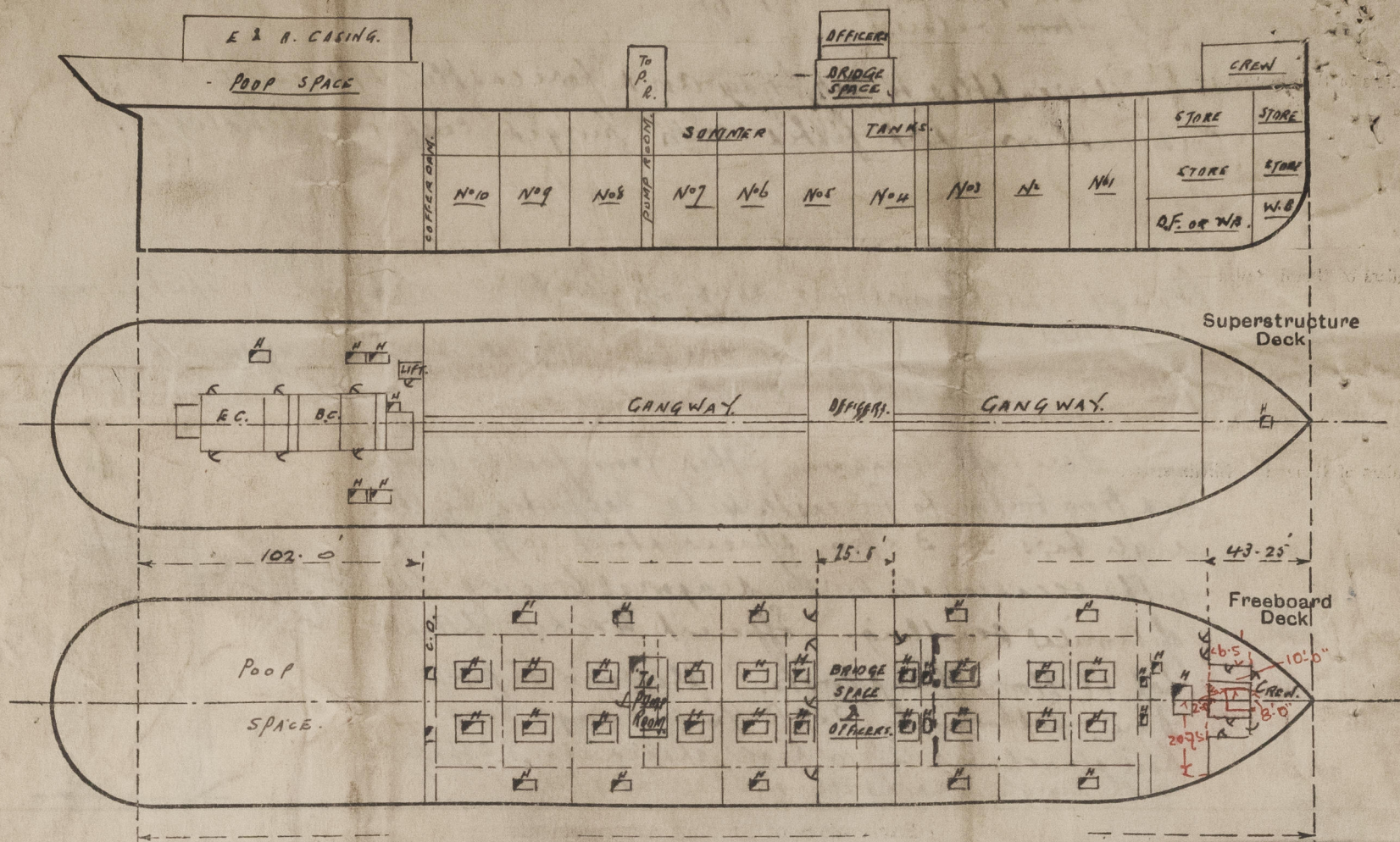
None.







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:—

Vessel examined in dry dock for

Convention Freeboard purposes and for Condition Survey.

Alterations in connection with Convention Freeboard now in hand. viz—

- (1) Bulwarks to plan herewith
- (2) No 1 Cargo Hatchway: steel cover being fitted in lieu of wood, to plan herewith.
- (3) Forward pumproom hatchway: Efficient steel cover being fitted in lieu of wood.
- (4) Hinges that door at front of bridge bulkhead being replaced by riveted plate.

Builder's name and yard number

Swan Hunter & Wigham Richardson Ltd.

Names of sister ships

This Report refers to the S.S. "SAN TIRSO"

Owners

Esso Oil & Shipping Co. Ltd.

Fee £

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Received by me



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