

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer~~ *Steamer* ~~Sailing Ship~~ *Tanker*

having *Poop, Trunk, Forecastle*

(Type of Superstructures.)

Ship's Name *T.S.S. "SAN CASTO"* Nationality and Port of Registry *British London* Official Number *149989* Gross Tonnage *2446* Date of Build *1928-2*

Port of Survey *San Nicholas, Aruba* *S.W.I.*

Date of Survey *May 8<sup>th</sup>, 9<sup>th</sup> 1933*

Name of Surveyor *E. S. Whitham*

Moulded Dimensions: Length *305.5'* Breadth *51.0'* Depth *15.0'*  
Moulded displacement at moulded draught = 85 per cent. of moulded depth *46.18* tons  
Coefficient of fineness for use with Tables *.815*

Particulars of Classification *+100.A1*  
*Carrying petroleum in bulk*

Depth for Freeboard (D)  
Moulded depth ... *15.0'*  
Upper plate ... *.03*  
Nothing on exposed deck  
 $T \left( \frac{L-S}{L} \right) =$   
Depth for Freeboard (D) = *15.03*

Depth correction  
(a) Where D is greater than Table depth  
(D-Table depth) R = *✓*  
(b) Where D is less than Table depth (if allowed)  
(Table depth-D) R = *(20.33 - 15.04) 2.346*  
*= -12.41" ✓*  
If restricted by superstructures *✓*

Round of Beam correction  
Moulded Breadth (B) *51.0*  
Standard Round of Beam =  $\frac{B \times 12}{50} =$  *12.24*  
Ship's Round of Beam = *12.75*  
Difference *.51" excess*  
Restricted to  
Correction =  $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.51}{4} \times .2382 = -.03"$

### DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	<i>83.0</i>	<i>83.00</i>	<i>7.5</i>	<i>✓</i>	<i>83.00</i>
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	<i>18.0</i>		<i>22.5</i>		
" overhang aft ...					
" overhang forward ...	<i>5.0</i>		<i>7.5</i>		
Forecastle enclosed ...	<i>38.0</i>	<i>38.00</i>	<i>7.5</i>	<i>✓</i>	<i>38.00</i>
" overhang ...					
Trunk ...	<i>184.5</i>	<i>111.37</i>	<i>7.5</i>	<i>✓</i>	<i>111.37</i>
" forward ...					
Tonnage opening aft ...	<i>57.0</i>		<i>7.5</i>		
" forward ...					
Total ...	<i>124.00</i>	<i>232.37</i>			<i>232.37</i>

Standard Height of Superstructure *6.55*  
" " R.Q.D. *✓*  
Deduction for complete superstructure *35.67"*  
Percentage covered  $\frac{S}{L} =$  *39.67% ✓*  
"  $\frac{S_1}{L} =$  *76.18% ✓*  
"  $\frac{E}{L} =$  *76.18% ✓*  
Percentage from Table, Line A. *Tanker*  
(corrected for absence of forecastle (if required)) *70.60 ✓*  
Percentage from Table, Line B.  
(corrected for absence of forecastle (if required))  
Interpolation for bridge less than 2L (if required)  
Deduction = *35.67 × .706 = -25.18"*

### SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
...	<i>40.50</i>	<i>1</i>		<i>40.50</i>	<i>12.5</i>	<i>12.50</i>	<i>1</i>		<i>12.50</i>
from A.P. ...	<i>18.02</i>	<i>4</i>		<i>72.08</i>	<i>2.0</i>	<i>1.00</i>	<i>4</i>		<i>4.00</i>
" ...	<i>4.45</i>	<i>2</i>		<i>8.90</i>	<i>0.0</i>	<i>0</i>	<i>2</i>		<i>0</i>
amidships ...	<i>✓</i>	<i>4</i>		<i>✓</i>	<i>0.0</i>	<i>✓</i>	<i>4</i>		<i>✓</i>
from F.P. ...	<i>8.91</i>	<i>2</i>		<i>17.82</i>	<i>0.0</i>	<i>0</i>	<i>2</i>		<i>0</i>
" ...	<i>36.04</i>	<i>4</i>		<i>144.16</i>	<i>3.0</i>	<i>1.10</i>	<i>4</i>		<i>4.40</i>
...	<i>81.00</i>	<i>1</i>		<i>81.00</i>	<i>15.0</i>	<i>12.75</i>	<i>1</i>		<i>12.75</i>
Total ...				<i>364.46</i>					<i>33.65</i>

Mean actual sheer aft = *Deficient below 50% standard*  
Mean standard sheer aft = *Deficient below 50% standard*  
Mean actual sheer forward = *Deficient below 50% standard*  
Mean standard sheer forward = *Deficient below 50% standard*  
Length of enclosed superstructure forward of amidships = *Tanker*  
" " aft of " = *Tanker*

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{330.81}{18} (.75 - .1983) = +10.14"$   
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 = *1.56*  
Moulded draught (d) = *13.48*

Deduction for Fresh Water.

Displacement in salt water at summer load water line  
 $\Delta =$  *4924*  
Tons per inch immersion at summer load water line  
 $T =$  *32.50*  
Deduction =  $\frac{\Delta}{40T}$  inches  
 $=$  *3.74"*

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.815 + .68}{1.36} = \frac{1.495}{1.360}$   
+ -  
Depth Correction ... *12.41*  
Deduction for superstructures ... *25.18*  
Sheer correction ... *10.14*  
Round of Beam correction ... *.03*  
Correction for Thickness of Deck amidships ...  
Other corrections, scantlings, etc. ...  
*10.14 37.62 - 27.48*  
Summer Freeboard = *18.80*

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, Wood, Steel, etc.

Tropical Fresh Water Line above Centre of Disc ... *7"*  
Fresh Water Line " " ... *3.74"*  
Tropical Line " " ... *3.74"*  
Winter Line below " " ... *3.74"*  
Winter North Atlantic Line " " ... *6.4"*

Tropical Fresh Water Freeboard ...  
Fresh Water ...  
Tropical ...  
Winter ...  
Winter North Atlantic ...



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway	5. O.T.H. Trunk Top	1. W.T.H. Fore Hold Trunk Top	12. W.T.H. Wing Tanks Upper deck	4. W.T.H. Air spaces Store Room Upper deck	1. W.T.H. Forecastle Deck	2. O.T.H. O.F. tanks Trunk Top	1. W.T.H. Refrig. Poop Deck		
Dimensions of Hatchway	4' x 4'	3' x 3'	2'6" x 2'6"	2' x 2'	2' x 4'	4' x 4'	4' x 4'		
COAMINGS	Height above Deck	9" x 3 1/2" BA	9" x 3 1/2" BA	3/4" compen. lating ring with 1/2" top plate rivetted to deck.	3/4" compen. lating ring rivetted to deck and 5/8" top.	15" - 3/8"	9" x 3 1/2" BA	18"	
	Thickness	.50"	.50"			.50"	.50"	3/8"	
	Stiffeners	✓	✓	✓	✓	✓	✓	Beading of 2 1/2 x 1 1/2"	
	Brackets, Stays	✓	✓	✓	✓	✓	✓	2 1/2 x 1 1/2"	
HATCH BEAMS	Number	.50 top	.50 top	manhole 14" x 13"	plate with manholes fitted.	Bar rivetted around top of coaming.	.50 top plate with 3" x 3"	half R. d. bar rivetted around top of coaming.	
	Spacing	3" x 3" x 5/16"	3" x 3" x 5/16"	14" x 13"	secured by 1/2" top plate and 7/8" top bolts and nuts.	secured by coaming rivetted to 3" x 3" x 3/8" angle ground by 13 toggles.	4 stiffeners to enter hatchway, secured by 13 toggles.	3" x 3" x 3/8" ground bar.	
	Scantling and Sketch	angle stiffeners to enter hatchway.	angle stiffeners to enter hatchway.	secured by 1/2" top plate and 7/8" top bolts and nuts.	secured by 1/2" top plate and 7/8" top bolts and nuts.	secured by coaming rivetted to 3" x 3" x 3/8" angle ground by 13 toggles.	secured by coaming rivetted to 3" x 3" x 3/8" angle ground by 13 toggles.	secured by coaming rivetted to 3" x 3" x 3/8" angle ground by 13 toggles.	
	Bearing Surface	by 13 toggles	by 13 toggles	by 13 toggles	by 13 toggles	by 13 toggles	by 13 toggles	by 13 toggles	
FORE AND AFTERS	Number	✓	✓	✓	✓	2 1/2 x 1 1/4"	✓	2 1/2 x 1 1/4"	
	Spacing	✓	✓	✓	✓	angle stiffeners	✓	angle stiffeners	
	Unsupported Lengths	✓	✓	✓	✓	Fore & aft for hatches.	✓	Fore & aft for hatches.	
	Scantling* and Sketch	✓	✓	✓	✓	Fore & aft for hatches.	✓	Fore & aft for hatches.	
HATCH COVERS	Material	Steel	Steel	Steel	Steel	Wood with canvas covers	Steel	Wood with canvas covers	
	Thickness	.50"	.50"	.50"	.50"	.50"	.50"	.50"	
	How fitted	hinged	hinged	hinged	hinged	hinged	hinged	hinged	
	Bearing Surface	0.75"	0.75"	0.75"	0.75"	0.75"	0.75"	0.75"	
Spacing of Cleats	✓	✓	✓	✓	✓	✓	✓	✓	
Number of Tarpaulins	✓	✓	✓	✓	2	✓	✓	2	
<p>*Are wood fore and afters steel shod at all bearing surfaces? ✓</p> <p>Are battens and wedges efficient and in good condition? ✓</p> <p>Are tarpaulins in good condition and in accordance with rule requirements? ✓</p> <p>Are lashings provided in accordance with rule requirements? ✓</p>									

Particulars of fiddle, funnel and ventilator coamings:—

Engine and fire-room ventilators and funnel in efficient condition.  
 Steel covers for fiddle openings in efficient condition.  
 Engine Room skylight of steel strongly constructed and in efficient condition.

Particulars of Flush Bunker Scuttles:—

None

Particulars of Companionways:—

one steel companionway to fore-castle 4'6" x 3'0" x 6 ft high on fore-castle deck. Companionway fitted with hinged steel door 4'6" x 2'0" with 15" sill. door fitted with lock capable of being manipulated from both sides.  
 one steel companionway with skylight on Trunk Top leading to Pump Room. Companionway 6'6" x 15'0" x 4'6" high and fitted with steel hinged door 4'9" x 2'3" with 18" sill. door secured by toggles capable of being manipulated from both sides.

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

Fore-castle Deck. 6-9 inch dia. 30" coaming x 5/16" to Fore-castle etc.  
 6-6" dia. 30" " x 5/16" " Wash Places.  
 Trunk Top. 2-9" dia. 36" " x 3/8" " Fore Hold.  
 2-18" dia. 36" " x 3/8" " Pump Room.  
 Poop Deck. 4-9" dia. 18" " x 1/4" " Refrig & Store-rooms.

Upper Deck 6-6" dia. 36" x 3/8" coaming to 11'0" 1-4-5 P & S wing tanks.

Efficient means of closing provided

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

Fore-castle Deck 1-4" dia. 6 ins above deck to F.P. tank  
 Upper Deck 6-3" dia. 30 ins " " " air spaces P & S.  
 2-4" dia. 4'6" " " " 124 wing tanks (air rooms).  
 Trunk Deck 2-3" dia. 18" " " " Fuel oil tanks  
 2 inch air pipes from main cargo hatches led into 4 inch main air pipe and then to masthead.

Poop Deck 1-4" dia. 15 ins above deck to A.R. tank.  
 2-1 1/2" " 12 ins " " " F.W. tanks

Efficient means of closing provided

Particulars of Gangway, Cargo and Coaling Ports:—

None



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all side scuttles in Forecastle and Poop in good condition and fitted with efficient hinged covers permanently attached.

Particulars of Gangways, Lifelines, etc. :—

The trunk-top forms a gang-way between the Poop and the Forecastle.

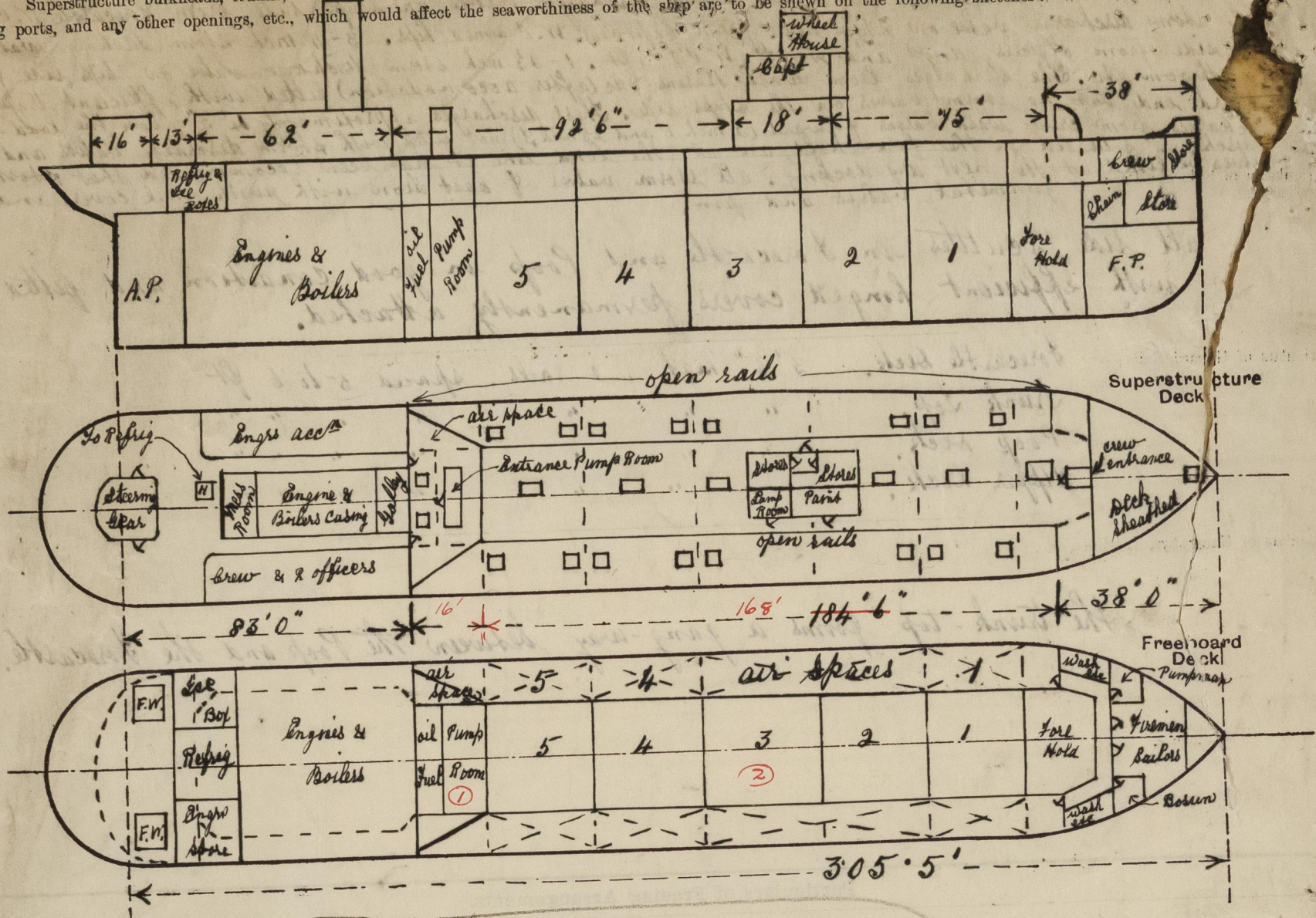
State position of each freeing port ... } After Well :—  
(E. and A. position and height above deck edge) } Forward Well :—  
State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such :—  
Additional area where sheer is less than standard.

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

Poop Bulkhead	... ..	No openings.
Raised Quarter Deck Bulkhead	...	2 W.T. hinged steel doors 5' x 2'6" with 18" sill. Doors with locks capable of opening both sides.
Bridge, Main Bulkhead	...	2 " " 5' x 2'3" " 18" " " " " " "
Bridge, Forward Bulkhead	...	1 " " " 5' x 2'6" " 18" " " " " " "
Forecastle Bulkhead	...	1 " " " 4'6" x 2'0" " 15" " " " " "
Machinery Casings on Fore-board	...	2 " " " 5'1" x 22" with 18" sill.
Exposed Machinery Casings on Superstructure Decks	...	fitted with locks and capable of being opened from either side.
Machinery Casings within Superstructure	...	1 W.T. hinged steel door to Pump Room with 18" sill.
Appliances	...	2 " " 5' x 2'3" with 18" sill to Store Room.



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



Trunk ①  $16 \times \frac{40}{51} = 12.55 \checkmark$   
 ②  $168 \times \frac{30}{67} = \frac{78.82}{111.37} \checkmark$

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

*over*

Builder's name and yard number *J. L. Thompson & Sons Ltd. Sunderland. Yard N° 55.*  
 Names of sister ships *"San Camilo"*  
 Owners *Eagle Oil & Shipping Co. Ltd.*  
 Fee £ *74* 150 <sup>50</sup>/<sub>100</sub> Received by me *[Signature]*