

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Index. No. **30174**  
(For London Office only.)

Computation of Freeboard for Steamer Sailing Ship, Tanker  
having Poop, Bridge + Forecastle

(Type of Superstructures.)

Ship's Name	Nationality and Port of Registry	Official Number	Gross Tonnage	Date of Build
<b>S/S "AMALTHUS"</b>	<b>British London</b>	<b>146196</b>	<b>5834</b>	<b>1921-9</b>

Port of Survey Hong Kong  
Date of Survey July 9, 13, 19. 1932  
Name of Surveyor J. L. Morrison  
Particulars of Classification +100A1  
"Carrying Petroleum in Bulk"  
S.S. No. 2-39 fit. for O.T.

Moulded Dimensions: Length 411.75' Breadth 53.08' Depth 31.0'  
Moulded displacement at moulded draught = 85 per cent. of moulded depth 13075 tons  
Coefficient of fineness for use with Tables .795

Depth for Freeboard (D)		Depth correction		Round of Beam correction	
Moulded depth	31.0	(a) Where D is greater than Table depth (D-Table depth) R = $(31.05 - 27.45)^3 = +10.80$		Moulded Breadth (B)	53.08
Stringer plate	.64	(b) Where D is less than Table depth (if allowed) (Table depth-D) R =		Standard Round of Beam = $\frac{B \times 12}{50} =$	12.74
Sheathing on exposed deck $T \left( \frac{L-S}{L} \right) =$		If restricted by superstructures		Ship's Round of Beam	12.50
Depth for Freeboard (D) =	31.05			Difference	Deficient .24
				Restricted to	
				Correction = $\frac{\text{Diff}}{4} \times (1 - \frac{S_1}{L}) =$	$\frac{.24}{4} (1 - \frac{47.39}{53.08}) = +.03$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	110.25	110.25	7'-6"		110.25
" overhang ...					
R.Q.D. enclosed ...					
" overhang ...					
Bridge enclosed ...	26.00	26.00	7'-6"		26.00
" overhang aft ...	3.50	2.62			2.62
" overhang forward ...	3.00	1.50			1.50
F'cle enclosed ...	52.75	52.75	7'-6"		52.75
" overhang ...	4.00	2.00			2.00
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	199.50	195.12			195.12

Standard Height of Superstructure	7.50
" " R.Q.D.	
Deduction for complete superstructure	42.00
Percentage covered $\frac{S}{L} =$	48.46
" " $\frac{S_1}{L} =$	47.39
" " $\frac{E}{L} =$	47.39
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	Tanker 38.39
Interpolation for bridge less than 2L (if required)	
Deduction =	42.00 x .3839 = 16.12

## SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	51.17	1		51.17	45.00	45.00	1		45.00
$\frac{1}{4}$ L from A.P. ...	22.77	4		91.08	19.00	16.59	4		66.36
$\frac{3}{8}$ L " ...	5.63	2		11.26	4.00	4.15	2		8.30
Amidships ...		4			0		4		
$\frac{3}{8}$ L from F.P. ...	11.26	2		22.52	10.00	10.37	2		20.74
$\frac{1}{4}$ L " ...	45.54	4		182.16	41.50	41.48	4		165.92
F.P. ...	102.34	1		102.34	102.00	102.00	1		102.00
Total ...				460.53					408.32

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( \frac{75-S}{2L} \right) = \text{Deficient } \frac{52.21}{18} \left( \frac{75-2423}{5077} \right) = +1.47$

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 =	31.05
Summer freeboard =	5.62
Moulded draught (d) =	25.43

Deduction for Tropical freeboard and addition for Winter freeboard =  $\frac{d}{4}$  inches =  $6.36 = 6\frac{1}{4}$   
Addition for Winter North Atlantic Freeboard (if required) =  $44.11 - 10.2 = 33.91$

## Deduction for Fresh Water.

Displacement in salt water at summer load water line  
 $\Delta = 12660$   
Tons per inch immersion at summer load water line  
 $T = 44.93$   
Deduction =  $\frac{\Delta}{40T}$  inches =  $7.04$

## TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient	$\frac{.795 + .68}{1.36} = \frac{1.475}{1.36}$	65.34
Depth Correction	10.80	70.86
Deduction for superstructures	1.47	
Sheer correction	.03	
Round of Beam correction	.34	
Correction for Thickness of Deck amidships		
Other corrections, scantlings, etc.		
Summer Freeboard =	67.38	

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

Tropical Fresh Water Line above Centre of Disc	132"
Fresh Water Line	7"
Tropical Line	62"
Winter Line below	62"
Winter North Atlantic Line	102"

Tropical Fresh Water Freeboard	4'-6"
Fresh Water	5'-0"
Tropical	5'-12"
Winter	6'-12"
Winter North Atlantic	6'-5"



# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS										
Description of Hatchway	On Fore. Deck	On Fore. Deck	On U. Deck	To Coal Bunkers	On Poop	On Poop	On Poop	On Poop	On Poop	28" O.T. to Comp. Tanks
Dimensions of Hatchway	10' x 8'	30' x 30'	4' 2" x 4' 4"	2' 2" x 3' 9"	2' 2" x 3' 9"	2' 2" x 3' 9"	2' 2" x 3' 9"	2' 2" x 3' 9"	2' 2" x 3' 9"	6' x 4'
COAMINGS	Height above Deck	30"	24"	9 3/4" x 11"	11"	11"	11"	25"	23"	18"
	Thickness	50	70	50 B.A.	8/20	8/20	8/20	9/20	9/20	7/20
	Sides	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stiffeners	✓	✓	✓	✓	✓	✓	✓	✓	✓
HATCH BEAMS	Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Spacing	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scantling and Sketch	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Bearing Surface	✓	✓	✓	✓	✓	✓	✓	✓	✓
FORE AND AFTERS	Number	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Spacing	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Unsupported Lengths	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scantling and Sketch	✓	✓	✓	✓	✓	✓	✓	✓	✓
HATCH COVERS	Material	Steel Plate	7/20	62	Pine 2 3/4"	Pine 2 3/4"	Pine 2 3/4"	Pine 2 3/4"	Steel plate .55	62
	Thickness	150	✓	✓	✓	✓	✓	✓	✓	✓
	How fitted	fitted with clips + lugs	✓	✓	✓	✓	✓	✓	✓	✓
	Bearing Surface	efficiently stiffened	✓	✓	✓	✓	✓	✓	✓	✓
Spacing of Cleats	Number of Tarpaulins	✓	✓	✓	✓	✓	✓	✓	✓	✓

\*Are wood fore and afters steel shod at all bearing surfaces? *Yes*  
 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*

Particulars of fiddle, funnel and ventilator coamings: *Stokehold gratings covered by strong steel hinged covers. Fiddle + funnel ventilators in efficient condition. Engine skylight of steel strongly constructed.*

Particulars of Flush Bunker Scuttles: *None*

Particulars of Companionways: *Two Companionways on Poop to storerooms as sketch, hinged wood doors 4'-11" x 22", sill 19", can be operated both sides. One Companionway to poop space enclosed by deck house, hinged wood door 5'-0" x 2'-0", sill 15", can be operated both sides.*

Particulars of Ventilators in exposed positions on freeboard and superstructure decks: *On Forecastle: 1-10 1/2" dia. to F.P. Store, coaming 4' 8" x 7/20, clipped to bulwark. 12-8" to rooms + fore. 12' x 5-0", fitted with screw down covers. On Pump Room: 1-2-23" coaming 4'-0" x 7/20. 2-15" to hold, coaming 32" x 7/20. 1-15" to Pump Room, 24" x 7/20. On Poop: 5-15 1/2" to coal bunkers, coaming 36" x 7/20. 5-8" to rooms, 12' x 5-0", fitted with screw down covers.*

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks: *On Forecastle: 1-4" to F.P. tank, 18" high. 2-4" to Foredeep tank, 18" high. On Poop: 1-3" to A.P. tank, 36" high. 4-2 1/2" F.W. 36" high. 6-3" to E.B. D.B. tanks, 36" high. 2-3" to E.B. Cofferdam, 31" high. For Well Deck: 2-4" to Fore cofferdam, 18" high. Aft Well Deck: 2-4" to aft cofferdam, 18" high, clipped to bulwark brackets. All air pipes of goose neck type + closed with wood plugs + canvas covers + gauze for oil fuel. Snifting holes at top of bend in air pipes 15" less in height.*

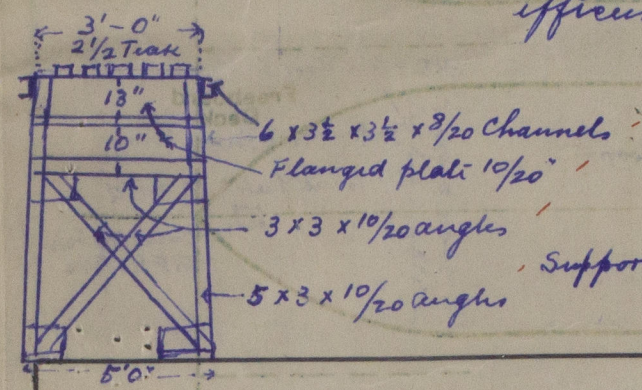
Particulars of Gangway Cargo and Coaling Ports: *None*

Particulars of Scuppers and Sanitary Discharge Pipes: *Scuppers + discharge pipes from forecabin are fitted with cast iron storm valves (heavy construction) 2 off. 5'-4" below freeboard deck, with efficient traps + plugs at inner end. Scuppers + discharge from Bridge + poop are fitted with cast iron storm valves on ship's side above freeboard deck, with efficient traps at inner end.*

Particulars of Side Scuttles: *12" side scuttles fitted in poop, bridge + forecabin only, none below freeboard deck. All scuttles provided with hinged deadlights of substantial construction.*

Particulars of Guard Rails: *Bulwarks in wells 3'-6" high, stiffeners 6 x 3 1/2 x 3/2 x .35 L, spaced 6'-0". Poop, bridge + forecabin have open rails 33" high, 2 rods, stanchions, spaces about 4'-6".*

Particulars of Gangways, Lifelines, etc.: *Gangway fitted from poop to bridge + from bridge to forecabin efficiently supported, having stanchions with single rail 34" high.*



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	95.50	3'-6"	3' x 1' 9"	2	92.2 sq	84.5 sq
Forward Well	116.15	3'-6"	3' x 1' 9"	8	114.2 sq	102.25 sq

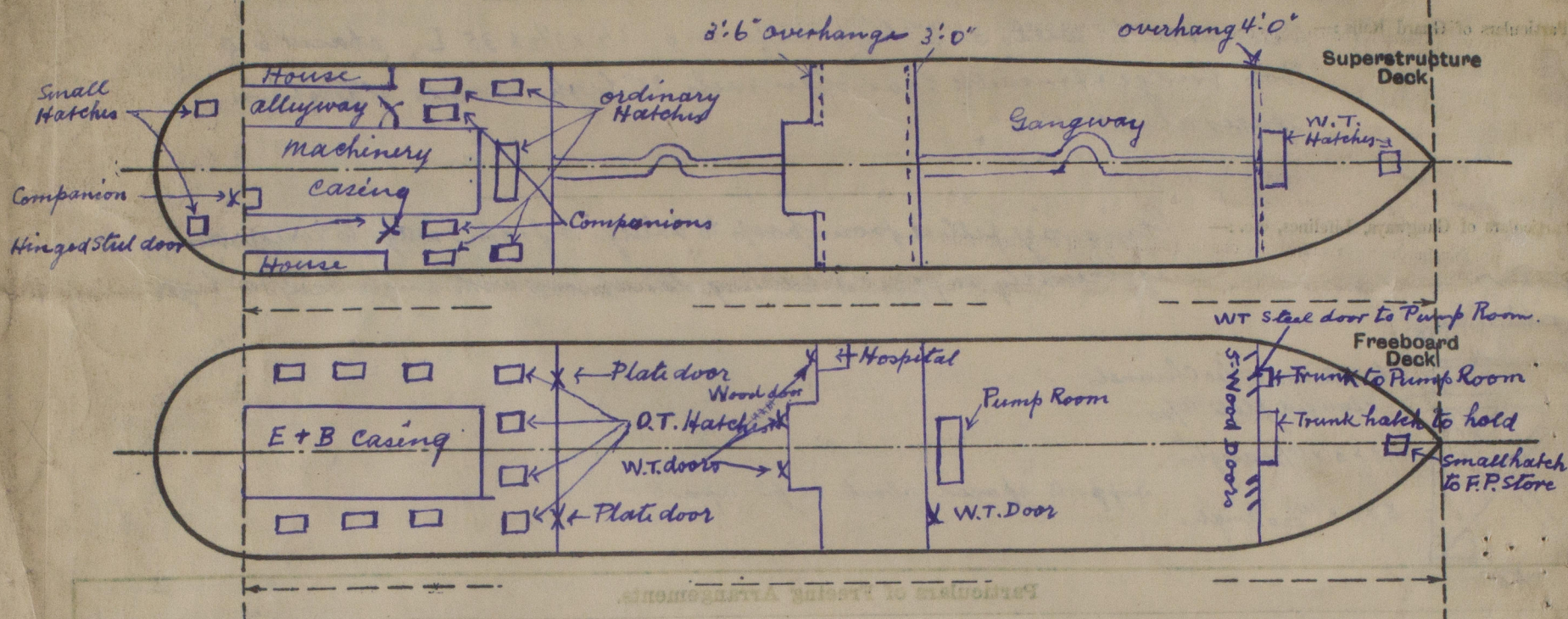
State position of each freeing port: *After Well: 12 1/2" (F. and A. position and height above deck edge). Forward Well: 12 1/2"*  
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such: *Two vertical bars in small ports. Two horizontal bars in large ports.*  
 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	9/20	9/20	10 x 3 3/8 x 3 3/8 x 9/20 E	40"	Brackets	2' 4" x 3' 0"	24"	7'-6"
Raised Quarter Deck Bulkhead	✓	✓	✓	✓	do.	4' 6" x 2' 6"	22"	7'-6"
Bridge, After Bulkhead	8/20	8/20	6 x 3 1/2 x 8/20 OA	36"	do.	5' 0" x 2' 8"	16"	7'-6"
Bridge, Forward Bulkhead	8/20	8/20	10 x 3 3/8 x 3 3/8 x 9/20 E	40"	do.	5' 0" x 2' 8"	16"	7'-6"
Forecastle Bulkhead	8/20	8/20	4 x 3 x 8/20 OA	32"	do.	5' 0" x 2' 0"	18"	7'-6"
Trunk, Aft	✓	✓	✓	✓	✓	✓	✓	✓
Trunk, Forward	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	✓	✓	✓	✓	✓	✓	✓	✓
Exposed Machinery Casings on Superstructure Decks	9/20	7/20	3 1/2 x 3 x 9/20 OA	25"	Taken Top + Bottom angles	4' 11" x 2' 1"	18"	7'-6"
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	9/20	8/20	3 1/2 x 3 x 8/20 OA	25"	- do -	4' 9" x 2' 11"	18"	7'-6"
Pump Room	10/20	7/20	4 x 3 x 8/20 OA	34"	do.	5' 0" x 2' 0"	17"	7'-0"
Deckhouses on Flush Deck Ships	✓	✓	✓	✓	✓	✓	✓	✓

Particulars of Closing Appliances (state if capable of being manipulated from both sides).	
Poop Bulkhead	<i>Portable plates attached with bolts + snugs.</i>
Raised Quarter Deck Bulkhead	<i>1 - Hinged wood door to Hospital, can be operated from both sides.</i>
Bridge, After Bulkhead	<i>2 - W.T. hinged steel doors, can be operated from both sides.</i>
Bridge, Forward Bulkhead	<i>1 - W.T. hinged steel doors, can be operated from both sides.</i>
Forecastle Bulkhead	<i>5 - hinged wood doors, can be operated from both sides.</i>
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	<i>1 - hinged W.T. steel door to pump room, can be operated from both sides.</i>
Exposed Machinery Casings on Superstructure Decks	<i>Hinged steel doors, can be operated from both sides.</i>
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	<i>Hinged steel doors, can be operated from both sides.</i>
Pump Room	<i>W.T. hinged steel doors, can be operated from both sides.</i>
Deckhouses on Flush Deck Ships	<i>W.T. hinged steel doors, can be operated from both sides.</i>



This hand-drawn plan illustrates the upper deck layout of the USS Albatross. The deck is divided into several compartments, including the 'Aft Peak Tank' at the stern, followed by 'E + B. Space' containing 'D. B. Tanks' and 'O. F. Bunkers'. A 'Cofferdam' runs along the side, with another 'Cofferdam' section further forward. The 'Pump Room' is located in the center, with a 'Pump Room House' situated above it. The deck is bordered by a 'Freeing Port' and a '3" Pine' edge. Dimensions for various sections are provided, such as 7'-6" for the aft peak tank, 22' for the freeing port, 30' for the pump room area, and 35'-6" for the cofferdam section. The plan also shows 'Store' and 'F.P. Tanks' at the bow.



Oil Tanker, Longitudinal Framing  
Machinery aft.

Vessel surveyed in dry dock, condition survey only.

Received by me.