

# Lloyd's Register of Shipping.

## SURVEYS FOR FREEBOARD.

Computation of Freeboard for ~~Steamer, Sailing Ship, Tanker~~ *Motor Vessel*

having *Poop, Raised quarter deck & forecastle*

(Type of Superstructures.)

Port of Survey *Hull*

Date of Survey *while building*

Name of Surveyor *W. Malcolm*

Particulars of Classification *+100A1 (Contemplated)*

Ship's Name *"CHAGFORD"*

Nationality and Port of Registry *British London*

Official Number *165380*

Gross Tonnage *310.96 (approx)*

Date of Build *1937*

Moulded Dimensions: Length *130'-0"* Breadth *24'-6"* Depth *9'-8 1/2"* *538*

Moulded displacement at moulded draught = 85 per cent. of moulded depth *(8'-2 1/2") 535* tons

Coefficient of fineness for use with Tables *.713* *541*

Depth for Freeboard (D)

Moulded depth (*as measured*) ... *9'-9 1/2"*

Stringer plate ... *0.3*

Sheathing on exposed deck

$T \left( \frac{L-S}{L} \right) =$  *✓*

Depth for Freeboard (D) = *9.78*

Depth correction

(a) Where D is greater than Table depth  
(D - Table depth) R =  $(9.78 - 8.67) 1.00 = +1.11$

(b) Where D is less than Table depth (if allowed)  
(Table depth - D) R =

If restricted by superstructures

Round of Beam correction

Moulded Breadth (B) *24'-6"*

Standard Round of Beam =  $\frac{B \times 12}{50} = 5.88"$

Ship's Round of Beam = *6"*

Difference = *.12*

Restricted to

Correction =  $\frac{\text{Diff}}{4} \times \left( 1 - \frac{S_1}{L} \right) = \frac{.12}{4} \times .2827 = .01$

## DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S <sub>1</sub> )	Height	Height Correction	Effective Length (E)
Poop enclosed ...	33.75	33.75	6'-8"		33.75
" overhang ...					
R.Q.D. enclosed ...	47.25	47.25	3'-3"		47.25
" overhang ...					
Bridge enclosed ...					
" overhang aft ...					
" overhang forward ...	12.25				
Fore enclosed <i>OPEN</i> ...	<del>15.00</del>	12.25	5'-6" mean	5.25	11.23
" overhang ...					
Trunk aft ...					
" forward ...					
Tonnage opening aft ...					
" forward ...					
Total ...	93.25	93.25			92.23

Standard Height of Superstructure	6.00'
" " R.Q.D.	3.20'
Deduction for complete superstructure	19.00'
Percentage covered $\frac{S}{L} =$	71.73
" " $\frac{S_1}{L} =$	71.73
" " $\frac{E}{L} =$	70.95
Percentage from Table, Line A. (corrected for absence of forecastle (if required))	64.17
Percentage from Table, Line B. (corrected for absence of forecastle (if required))	
Interpolation for bridge less than 2L (if required)	
Deduction = $19.00 \times .6417 =$	-12.19

## SHEER CORRECTION.

Station	Standard Ordinate	S	Product	Actual Ordinate	Effective Ordinate	S	Product
A.P. ...	23.00	1	23.00	21	27.25	1	27.25
1/8 L from A.P. ...	10.23	4	40.92	10.5	12.13	4	48.52
2/8 L " ...	2.53	2	5.06	3	3.00	2	6.00
Amidships ...		4		0		4	
2/8 L from F.P. ...	5.06	2	10.12	6.3	6.50	2	13.00
1/8 L " ...	20.47	4	81.88	21	21.00	4	84.00
F.P. ...	46.00	1	46.00	46.4	46.25	1	46.25
Total ...			206.98				225.02

Correction =  $\frac{\text{Difference between sums of products}}{18} \left( .75 - \frac{S}{2L} \right) = \frac{18.04}{18} \left( .75 - \frac{3586}{130} \right) = -.39$

If limited on account of midship superstructure. *✓*If limited to maximum allowance of 1 1/2 ins. per 100 ft. *✓*Deduction for Tropical Freeboard.  
Addition for Winter and Winter North Atlantic Freeboard.

Depth to <i>Raised Qr.</i> Freeboard Deck =	Ft. <i>13.03</i>
Summer freeboard =	<i>3.42</i>
Moulded draught (d) =	<i>9.61</i>

Deduction for Tropical freeboard and addition for

Winter freeboard =  $\frac{d}{4}$  inches =  $2.40 = 2 \frac{1}{2}$ Addition for Winter North Atlantic Freeboard (if required) = *4 1/2*

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 661$

Tons per inch immersion at summer load water line

$T = 6.64$

Deduction =  $\frac{\Delta}{40T}$  inches

$\frac{661}{40 \times 6.64} = 2.49 = 2 \frac{1}{2}$

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TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient  $\frac{.713 + .68}{1.36} = \frac{1.393}{1.36}$

$\frac{1.393}{1.36} = 1.024$

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

Tropical Fresh Water Line above Centre of Disc ...	<i>2 1/2"</i>
Fresh Water Line " " ...	<i>2 1/2"</i>
Tropical Line " " ...	<i>1 1/2"</i>
Winter Line below " " ...	<i>2 1/2"</i>
Winter North Atlantic Line " " ...	<i>4 1/2"</i>

Tropical Fresh Water Freeboard ...

Fresh Water " " ...

Tropical " " ...

Winter " " ...

Winter North Atlantic " " ...

3'-5" (limited)

3'-2 1/2"

3'-2 1/2"

3'-5" (limited)

3'-7 1/2"

3'-9 1/2"

# PARTICULARS OF PROTECTION TO OPENINGS, ETC.

HATCHWAYS ON FREEBOARD AND SUPERSTRUCTURE DECKS									
Description of Hatchway			No. 1 Forw. (Upper Deck)			No. 2 R. & A.			
Dimensions of Hatchway			29'-9" x 15'-0"			35'-0" x 15'-0"			
COAMINGS	{	Height above Deck	3'-3"			2'-9"			
		Thickness	3/8"			3/8"			
		Stiffeners	8 x 22 x 35 B.A.			8 x 3 x 35 B.A.			
		Brackets, Stays	4 x 22 x 35 B.A.			30 plate ③			
HATCH BEAMS	{	Number	3'-7 1/2"			3'-9"			
		Spacing	3'-6"			3'-6"			
		Scantling and Sketch	[Sketch: Plate 11 x 1/2" angles 2 1/2 x 22 x 36]			as No. 1			
		Bearing Surface	3			3			
FORE AND AFTERS	{	Number	None			None			
		Spacing	None			None			
		Unsupported Lengths	None			None			
		Scantling* and Sketch	None			None			
		Bearing Surface	None			None			
HATCH COVERS	{	Material	W.W.			W.W.			
		Thickness	2 1/2"			2 1/2"			
		How fitted	F.T.R.			F.T.R.			
		Bearing Surface	3 x 32			3 x 32			
Spacing of Cleats			8 1/2"			24"			
Number of Tarpaulins			2			2			
*Are wood fore and afters steel shod at all bearing surfaces? <input checked="" type="checkbox"/>									
Are battens and wedges efficient and in good condition? <input checked="" type="checkbox"/>									
Are tarpaulins in good condition and in accordance with rule requirements? <input checked="" type="checkbox"/>									
Are lashings provided in accordance with rule requirements? <input checked="" type="checkbox"/>									

Reilon patent rolling hatchway beams are fitted as per plan approved 7/18/36.

Particulars of fiddle, funnel and ventilator coamings:— Fiddle, funnel ventilator coamings in good condition. Eng. Room & light of steel, with hinged steel flaps & bullseyes.

Particulars of Flush Bunker Scuttles:— one on poop deck to alley coal bunker, of Cast Iron, substantially constructed. Chain attachment ~~to be~~ in place.

Particulars of Companionways:— One, on poop deck to crew space, built in Engine Room casing end of steel, substantially constructed. Opening 4' 1" x 2' 1" closed by leak hinged door, with spring lock. Sill 18' high.

Particulars of Ventilators in exposed positions on freeboard and superstructure decks:—  
 L.R. 11 1/2" dia. coaming 36" x 34" to hold. 2 ft.  
 R.R. 11 1/2" " " 30" x 30" crew aft. 2 ft.  
 Poop 6" " " 30" x 30" " " 2 ft.  
 7 1/2" dia. Mushroom Vents to crew accommodation.

Particulars of Air Pipes in exposed positions on freeboard, raised quarter, or superstructure decks:—  
 Fore deck: 3" G.N. 2 1/2" high to Fore peak tank.  
 U. Deck: 3" " 14 1/2" " R. Bottom. 2 ft.  
 R.R. Deck: 3" " 33" " " 2 ft.  
 Poop Deck: 3" " 18" " aft peak tank.

Particulars of Gangway Cargo and Coaling Ports:—

— none —

Heilson patent rolling hatchway beams are fitted as per plan approved 7/18/36.

plugs & canvas covers to be in place.

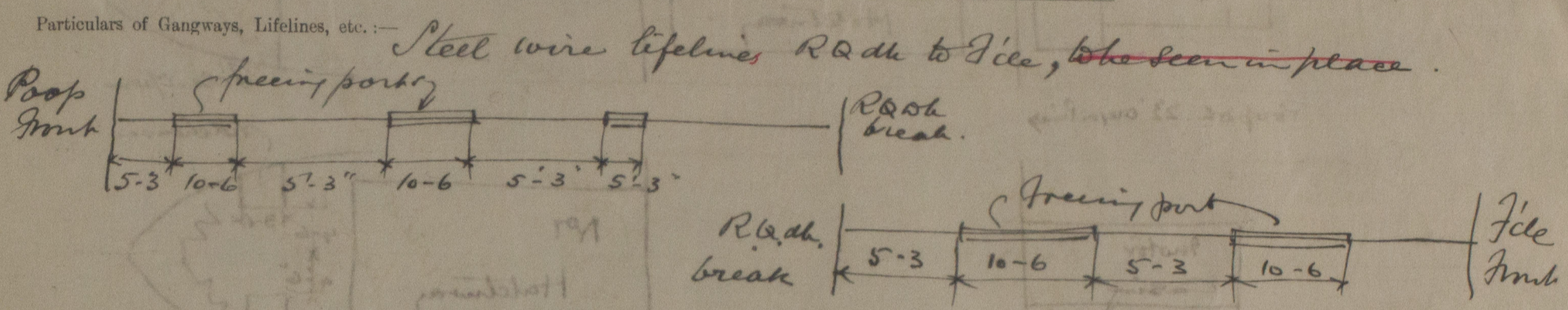
wood plugs to be in place.

Chagford

Particulars of Scuppers and Sanitary Discharge Pipes:— Scuppers on upper & R. & A. of gunwale bar type. From upper deck in poop, sanitary discharge pipes led to below upper deck with storm valve at shell controlled from above upper deck. Drain pipes lead to shell below upper deck with storm valves at shell and screwed caps on upper deck.

Particulars of Side Scuttles:— In poop tween decks, of substantial construction, having hinged deadlights.

Particulars of Guard Rails:— Poop. 3 rod, 3' 3" high stanchions 5' apart & steel bulwark 2 1/2" high strongly constructed & stayed. Upper & R. & A. Sts. Steel bulwark 3' 6" x 3' 0" high strongly constructed & stayed. Fore deck: 2 rod, 3' 0" high, stanchions 5' 0" apart.



Particulars of Freeing Arrangements.						
	Length of Bulwark	Height of Bulwark	Size of Freeing Ports	Number each side	Area each side	Rule area each side
R. & A. After Well	47.25	3' 0"	10' 6" x 6"	2	13.12 f	
Upper Deck Forward Well	36.75	3' 6"	10' 6" x 6"	2	10.5 f	10.17 f

State position of each freeing port (F. and A. position and height above deck edge) After Well: — } 7 1/2' Forward Well: — } 7 1/2'  
 State whether the freeing ports are fitted with shutters, bars, or rails, and give particulars of such:— Slots formed by flanged bulwark plating.  
 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	.26	.26	3 x 22 x 30	30"	laps	none	✓	3' 5" + 3' 3"
Raised Quarter Deck Bulkhead	.30	.30	3 x 22 x 30	3' 9"	none	none	✓	3' 3"
Bridge, After Bulkhead								
Bridge, Forward Bulkhead								
Forecastle Bulkhead								
Trunk, Aft								
Trunk, Forward								
Exposed Machinery Casings on Freeboard or Raised Quarter Decks								
Exposed Machinery Casings on Superstructure Decks	.26	.26	3 x 22 x 26	27"	batts at top	40 x 2-0 44-1 x 2-1	18" 18"	6' 0" + 3' 9"
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	No openings
Raised Quarter Deck Bulkhead	No openings
Bridge, After Bulkhead	
Bridge, Forward Bulkhead	
Forecastle Bulkhead	Open.
Exposed Machinery Casings on Freeboard or Raised Quarter Decks	
Exposed Machinery Casings on Superstructure Decks	
Machinery Casings within Superstructures not fitted with Class I Closing Appliances	Peak hinged doors, spring lock. manipulated from both sides. Yes.
Deckhouses on Flush Deck Ships	

Companion

Wheel No.

Motor Room

15'0"

Superstructure Deck

No. 2 Hatchway

File open

Poop deck 23' over Riny

Freeboard Deck

Motor Casing

No. 1 Hatchway

do.

4'-6" x 3'-6" x 4'-6"

Actual sheet at forward end of poop = 5.70  
Vertical " " " " = 5.70 + .60 = 6.30  
" " " " after perpendicular = 6.30  $\times \left( \frac{65}{31.25} \right)^2 = 27.25$

To be charged with  
First Entry.