

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR ~~STEAMER, SAILING SHIP, TANKER.~~)

Ship's Name BRITISH RANGER	Official Number 181916	Nationality and Port of Registry BRITISH LONDON.	Gross Tonnage 8575	Date of Build 1948	Port of Survey GLASGOW
TO CR. OF RUDDER STOCK. Moulded Dimensions: Length 464.00' Breadth 61.50' Depth 34.00' Moulded displacement at moulded draught = 85 per cent. of moulded depth 18345 tons Coefficient of fineness for use with Tables .779					Date of Survey WHILST BUILDING Surveyor's Signature <i>W. Macmillan</i> Particulars of Classification +100 A1 CARRYING PETROLEUM IN BULK (CONTEMPLATED)
Depth for Freeboard (D). Moulded depth ... 34.00' Stringer plate72" Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) = \text{NIL.}$ Depth for Freeboard (D) = 34.06'		Depth correction. (a) Where D is greater than Table depth (D-Table depth) R = 34.06 - 30.93 = +9.39" (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) = 61.50' Standard Round of Beam = $\frac{B \times 12}{50} = \text{14.76}$ Ship's Round of Beam = 14.75" Difference = -.01 Restricted to Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S_1}{L} \right) = \frac{.01}{4} \times .5878 = \text{NIL.}$	

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed EQUIV.	97.83	97.83	8.00'	✓	97.83	Standard Height of Superstructure 7.50'
" overhang ...	1.17	.58			.58	" " R.Q.D. ✓
R.Q.D. enclosed						Deduction for complete superstructure 42.00'
" overhang						Percentage covered $\frac{S}{L} = \text{41.59}$
Bridge enclosed EQUIV.	42.50	42.50	8.00'	✓	42.50	" " $\frac{S_1}{L} = \text{41.22}$
" overhang aft ...	3.50	2.63			2.63	" " $\frac{E}{L} = \text{32.22}$
" overhang forward	.50	.25			.25	Percentage from Table, Line A. Tanker 32.22
F'cle enclosed EQUIV.	47.48	47.48	8.00'	✓	47.48	(corrected for absence of forecastle (if required))
" overhang ...						Percentage from Table, Line B.
Trunk aft ...						(corrected for absence of forecastle (if required))
" forward ...						Interpolation for bridge less than .2L (if required)
Tonnage opening aft ...						Deduction = 42.00 × .3222 = 13.53
" forward						
Total ...	192.98	191.27			191.27	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate SEE OVER	Effective Ordinate	S	M	Product
A.P. ...	56.40	1		56.40	59.00"	56.40	1		56.40
$\frac{1}{4}$ L from A.P. ...	25.10	4		100.40	25.25"	25.10	4		100.40
$\frac{3}{4}$ L " ...	6.205	2		12.41	6.38"	6.205	2		12.41
Amidships ...	-	4		-	-	-	4		-
$\frac{3}{4}$ L from F.P. ...	12.41	2		24.82	11.75"	11.75	2		23.50
$\frac{1}{4}$ L " ...	50.20	4		200.80	49.13"	49.13	4		196.52
F.P. ...	112.80	1		112.80	114.00"	114.00	1		114.00
Total ...				507.63					503.23

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{4.40}{18} \left(.75 - \frac{2079}{5421} \right) = +.13"$
 If limited on account of midship superstructure.

Mean actual sheer aft = *Excess.*
 Mean standard sheer aft

Mean actual sheer forward = *Deficient*
 Mean standard sheer forward

Length of enclosed superstructure forward of amidships = *Tanker.*
 " " aft of " =

Deduction for Tropical Freeboard.

Addition for Winter and Winter North Atlantic Freeboard.

Ft.
 Depth to Freeboard Deck = **34.06**
 Summer freeboard = **6.71**
 Moulded draught (d) = **27.35**

Deduction for Tropical freeboard and addition for

Winter freeboard = $\frac{d}{4}$ inches = **6.84" = 6 $\frac{3}{4}$ "**

Addition for Winter North Atlantic Freeboard (if required) = **6.84 + 4.64 = 11.48" = 11 $\frac{1}{2}$ "**

SEE OVER.

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta = 17355$

Tons per inch immersion at summer load water line

$T = 58.69$

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

= **7.39"**

= **7 $\frac{1}{2}$ "**

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.779 + .68}{1.36} = \frac{1.459}{1.36}$

Depth Correction ... **9.39**

Deduction for superstructures ... **13.53**

Sheer correction ... **.13**

Round of Beam correction ...

Correction for Thickness of Deck amidships ...

Other corrections, scantlings, etc. ...

Summer Freeboard = **80.42**

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

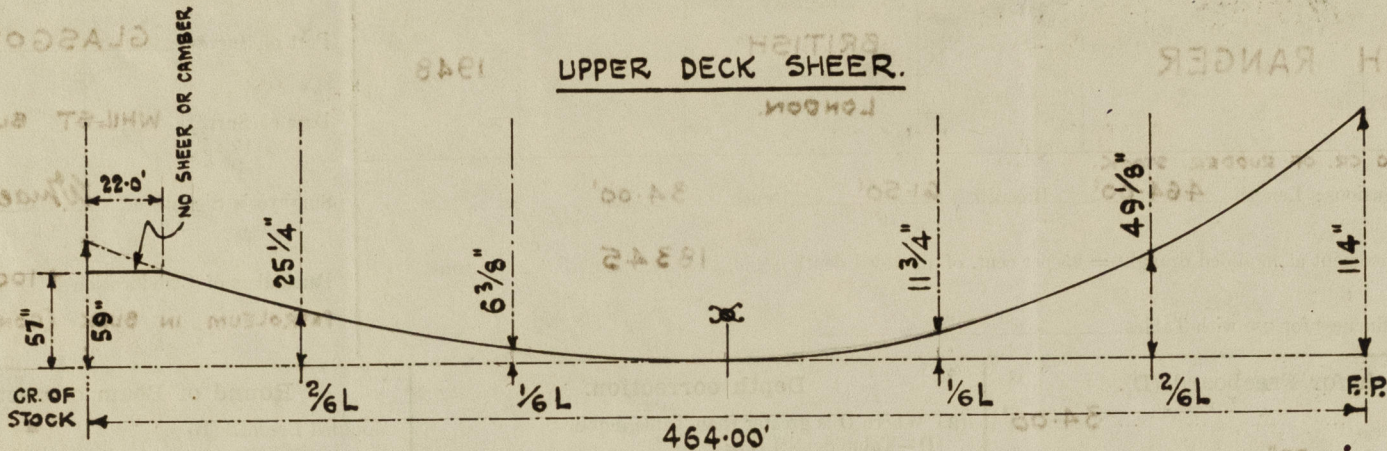
Tropical Fresh Water Line above Centre of Disc	14$\frac{1}{4}$"
Fresh Water Line	7$\frac{1}{2}$"
Tropical Line	6$\frac{3}{4}$"
Winter Line below	6$\frac{3}{4}$"
Winter North Atlantic Line	11$\frac{1}{2}$"

Tropical Fresh Water Freeboard	5' 6$\frac{1}{4}$"
Fresh Water	6' 1"
Tropical	6' 1$\frac{3}{4}$"
Winter	7' 3$\frac{1}{4}$"
Winter North Atlantic	7' 8"

BRITISH RANGER

A new form should be prepared if any alterations that affect the freeboard have been made. If no such alterations have been made, the Surveyor should endorse the form on this side with his signature and the date.

UPPER DECK SHEER.



$\text{Poop at side} = 94.50'$
 $\frac{2}{3} \times 5.0 = 3.33'$
 $97.83' \text{ equivalent length}$

$\text{Overhang} = 99.00' - 97.83'$
 $= 1.17'$

$\text{Bridge at side} = 39.50'$
 $\frac{2}{3} \times 4.5 = 3.00'$
 $42.50'$

$\text{Overhang} = 43.00' - 42.50'$
 $= 0.50'$

Forecastle :-

$\text{Forward of } \frac{1}{10} = \text{wings} = 18.08' \times 13.50' = 244.10$
 $13.80' \times 5.40' = 74.52$
 318.62

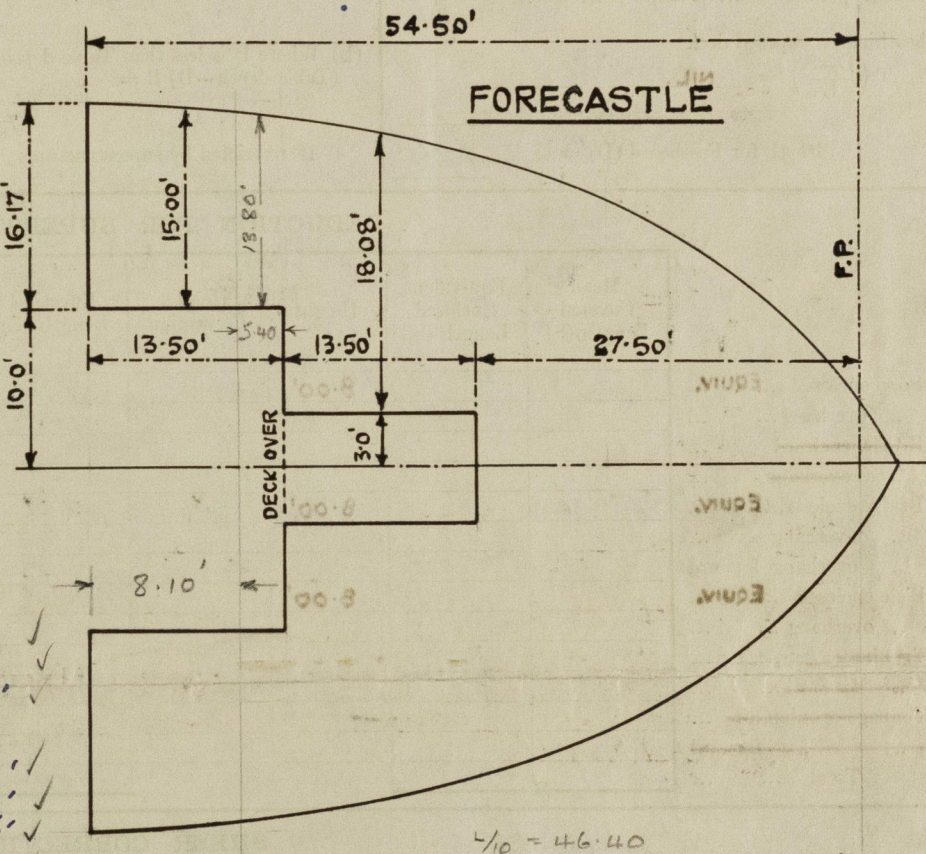
$\frac{318.62'}{21.08'} = 15.12'$
 $\frac{27.50'}{21.08'} = 1.30'$

$\text{Equivalent enclosed} = 42.62'$

$\text{To deck over} = 41.00'$

No overhang.

$\text{Aft of } \frac{1}{10} = 8.10' \times 15.00'$
 $= 121.50/25 = 4.86' = \text{equivalent enclosed}$
 $\frac{42.62}{47.48'} \text{ total equivalent enclosed length}$



$\frac{1}{10} = 46.40$

FREEBOARD SURVEY REQUEST FORM ATTACHED.

PLANS ENCLOSED:- GENERAL ARRANGEMENT. MIDSHIP SECTION. FRAMING PROFILE
STEEL DECKS. RUDDER. STERNFRAME.

EXTREME DRAUGHT DISPLACEMENT S.W. T.P.I.
 28'-0" 17,757 TONS. 58.88
 27'-0" 17,052 " 58.55
 KEEL ALLOWANCE 1"

Trade of ship INTERNATIONAL.

Names of sister ships

Builder's name and yard number HARLAND & WOLFF, LD. GLASGOW. YARD NO 1362 G.

Owners BRITISH TANKER CO. LD.

Fee £ 19-0-0



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Foundation