

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

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

Ship's Name "EMPIRE FLORA"	Official Number 180438	Nationality and Port of Registry BRITISH. HULL.	Gross Tonnage 292	Date of Build 1945	Port of Survey Hull.
Moulded Dimensions: Length 115'-0" Breadth 27'-6" Depth 13'-6"					Date of Survey During construction
Moulded displacement at moulded draught = 85 per cent. of moulded depth 580 tons					Surveyor's Signature J.R. Macleod
Coefficient of fineness for use with Tables .68 (.559 actual) $T = 5.96$					Particulars of Classification *100A1. FOR TOWING SERVICES (CONTEMPLATED)

DEPTH FOR FREEBOARD (D).		DEPTH CORRECTION.		ROUND OF BEAM CORRECTION.	
Moulded depth	13'-5"	(a) Where D is greater than Table depth (D-Table depth) R = $(13.58 - 7.67) \times .885 = + 5.22$		Moulded Breadth (B)	27'-5"
Stringer plate	.35	(b) Where D is less than Table depth (if allowed) (Table depth-D) R = 5.96		Standard Round of Beam = $\frac{B \times 12}{50}$	6'-60"
Sheathing on exposed deck	✓			Ship's Round of Beam	8"
$T \left(\frac{L-S}{L} \right) =$				Difference	1'-40"
Depth for Freeboard (D) =	13'-5.83	If restricted by superstructures		Restricted to	
				Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L} \right)$	$\frac{1.40}{4} = -.35$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed					
" overhang					
R.Q.D. enclosed					
" overhang					
Bridge enclosed					
" overhang aft					
" overhang forward					
F'cle enclosed					
" overhang					
Trunk aft					
" forward					
Tonnage opening aft					
" " forward					
Total					

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

SHEER HEIGHTS TAKEN FROM TOP OF KEEL TO UPPER DECK AT SIDE.**SHEER CORRECTION.**

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P.	21.50	1	21.50	35.75	35.75	1	35.75
$\frac{1}{8}L$ from A.P.	9.565	4	38.26	20.25	20.25	4	81.00
$\frac{2}{8}L$ "	2.365	2	4.73	8.00	8.00	2	16.00
Amidships	-	4	-	3.00	3.00	4	6.00
$\frac{3}{8}L$ from F.P.	4.73	2	9.46	19.50	19.50	4	78.00
$\frac{4}{8}L$ "	19.13	4	76.52	53.50	53.50	1	53.50
F.P.	43.00	1	43.00				
Total			193.47				270.25

Mean actual sheer aft = $\frac{76.78}{18} = 4.265$
Mean standard sheer aft = $\frac{35.75}{18} = 1.986$
Mean actual sheer forward = $\frac{78.00}{18} = 4.333$
Mean standard sheer forward = $\frac{53.50}{18} = 2.972$

Length of enclosed superstructure forward of amidships = $\frac{11.50 + 1.73}{2} = 6.615$
aft of amidships = $\frac{11.50 + 1.73}{2} = 6.615$

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{76.78 - 270.25}{18} = -3.20$
If limited on account of midship superstructure. **No. Flush Deck**
If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. **1.73**

Deduction for Tropical Freeboard.**Addition for Winter and Winter North Atlantic Freeboard.**

Depth to Freeboard Deck = **13'-5.83**
Summer freeboard = **1'-3.75**
Moulded draught (d) = **12'-2.08**
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **3'-05" = 3**
Addition for Winter North Atlantic Freeboard (if required) = **5**

Deduction for Fresh Water.

Displacement in salt water at summer load water line
 $\Delta = 634$
Tons per inch immersion at summer load water line
 $T = 6.18$
Deduction = $\frac{\Delta}{40 T}$ inches = $\frac{634}{40 \times 6.18} = 2.56 = 2\frac{1}{2}$
DRAUGHTS
11'-5 3/4" 586 6.02
10'-6" 517 5.79
9'-6" 449 5.54

TABULAR FREEBOARD corrected for Flush Deck (if required)**Correction for coefficient**

	+ .19	-
Depth Correction	5.22	-
Deduction for superstructures	-	-
Sheer correction	-	1.73
Round of Beam correction	-	.35
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	-	-
	5.22	2.08
Summer Freeboard =	16'-38.4	

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

Tropical Fresh Water Line above Centre of Disc	5 1/2"	Tropical Fresh Water Freeboard	1'-4 1/4"
Fresh Water Line	2 1/2"	Fresh Water	1'-2 3/4"
Tropical Line	3"	Tropical	1'-1 1/4"
Winter Line below	3"	Winter	1'-7 1/4"
Winter North Atlantic Line	5"	Winter North Atlantic	1'-9 1/4"

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.

(207)

Building construction
Hull
1912
10000
FOR TOWING SERVICES
(CONTINGENT)

1912

1912

EMPIRE FLOA

HULL

1912

1912

1912

280
T = 200

1912

1912

TO BE CHARGED WITH FIRST ENTRY.
HEIGHT TAKEN FROM TOP OF KEEL
AT WATER DECK AT SIDE

1912
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1912

Trade of ship FOR TOWING SERVICES.

Names of sister ships ✓

Builder's name and yard number COCHRANE & SONS LTD. SELBY. YARD NO 1297.

Owners MINISTRY OF WAR TRANSPORT.

Fee £ TO BE CHARGED WITH FIRST ENTRY.

[Handwritten signature]

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Foundation