

EMPIRE REAPER
36785

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

SELF TRIMMING MOTOR COLLIER.
(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index. No. 37259
(For London Office only).

19 MAY 1943

Ship's Name EMPIRE RANCHER	Official Number 169278	Nationality and Port of Registry BRITISH HULL	Gross Tonnage 332	Date of Build 1943	Port of Survey HULL
Moulded Dimensions: Length 139'-6" Breadth 21'-6" Depth 10'-6" 139'-6" TO CR. OF RUDDER STOCK					Date of Survey DURING CONSTRUCTION.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 591 tons T.P.I. = 6.35					Surveyor's Signature J. K. M. S. Clerk
Coefficient of fineness for use with Tables .773					Particulars of Classification + 100 A.I. COASTING SERVICE GREAT BRITAIN & IRELAND. <i>(contemplated)</i>

Depth for Freeboard (D). Moulded depth 10'-5" Stringer plate4003 Sheathing on exposed deck $T \left(\frac{L-S}{L} \right) =$ NO SHEATHING Depth for Freeboard (D) = 10.53	Depth correction. (a) Where D is greater than Table depth (D-Table depth) R = $(10.53 - 9.30) 1.073 = +1.32"$ 1.23 (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) 21'-5" Standard Round of Beam = $\frac{B \times 12}{50} =$ 5.16 Ship's Round of Beam = 6" Difference .84 Restricted to ✓ Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L} \right) =$ $\frac{.84}{4} \times .6237 = -.13"$
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DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)	
Poop enclosed ...	36'-5" <i>SEE SKETCH</i>	36.42	7'-0"	✓	36.42	Standard Height of Superstructure 6.0
.. overhang ...	1'-8"	.83	20"		.83	.. R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure 19.95"
.. overhang ...						Percentage covered $\frac{S}{L} =$ 38.60
Bridge enclosed $\frac{S_1}{L} =$ 37.63
.. overhang aft $\frac{E}{L} =$ 21.48
.. overhang forward ...	14'-9" <i>SEE SKETCH</i>	14.75	6'-0"	✓	14.75	Percentage from Table, Line A. 21.48 (corrected for absence of fore-castle (if required)) ✓
F'cle enclosed ...	1'-0"	.50	12"		.50	Percentage from Table, Line B. ✓ (corrected for absence of fore-castle (if required)) ✓
Trunk aft ...						Interpolation for bridge less than 2L (if required) ✓
.. forward ...						Deduction = 19.95 x .2148 = -4.29"
Tonnage opening aft ...						
.. forward ...						
Total ...	53.83	52.50			52.50	

SHEER CORRECTION.

Station	Standard Ordinate	S M	Product	Actual Ordinate	Effective Ordinate	S M	Product
A.P. ...	23.95	1	23.95	18"	18.00	1	18.00
$\frac{1}{4}$ L from A.P. ...	10.66	4	42.64	5"	5.00	4	20.00
$\frac{3}{4}$ L " ...	2.63	2	5.26	0	-	2	-
Amidships ...	-	4	-	0	-	4	-
$\frac{3}{4}$ L from F.P. ...	5.27	2	10.54	0	-	2	-
$\frac{1}{4}$ L " ...	21.315	4	85.26	12"	12.00	4	48.00
F.P. ...	47.90	1	47.90	42"	42.00	1	42.00
Total ...			215.55				128.00

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{87.55}{18} (.75 - .1930) = +2.71"$
 If limited on account of midship superstructure. **✓** If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. **✓**

Mean actual sheer aft =
Mean standard sheer aft = **Deficient**
 Mean actual sheer forward =
Mean standard sheer forward =
 Length of enclosed superstructure forward of amidships = **Def. sheer.**
 .. aft of .. =

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

Depth to Freeboard Deck = **10.53**
 Summer freeboard = **1.23**
 Moulded draught (d) = **9.30**

Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = **2.32 = 2 $\frac{1}{4}$ "**

Addition for Winter North Atlantic Freeboard (if required) = **✓**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$ **634**

Tons per inch immersion at summer load water line

$T =$ **6.45**

Deduction = $\frac{\Delta}{40T}$ inches = **2.46**
2 $\frac{1}{2}$ "

DRAFT	EXT. DISP.	T.P.I.
9'-6"	646	6.49
9'-0"	603	6.37
8'-6"	562	6.27

TABULAR FREEBOARD corrected for Fresh Deck (if required)

Correction for coefficient

14.14
15.11

	+	-	
Depth Correction ...	1.32	-	
Deduction for superstructures ...	-	4.29	8.63
Sheer correction ...	2.71	-	20.543
Round of Beam correction ...	-	.13	
Correction for Thickness of Deck amidships ...	-	-	
Other corrections, scantlings, etc. ...	-	-	
	9.03	4.42	- .39
Summer Freeboard =	14.72		

SUMMER FREEBOARD amidships from Centre of Disc to top of Deck Line, **WATER**, Steel, Deck: **1'-2 $\frac{3}{4}$ "**

Tropical Fresh Water Line above Centre of Disc **Not Assigned**
 Fresh Water Line " " **2 $\frac{1}{2}$ "**
 Tropical Line " " **Not Assigned**
 Winter Line below " " **2 $\frac{1}{4}$ "**
 Winter North Atlantic Line " " **Not Assigned**

Tropical Fresh Water Freeboard ... **1'-0 $\frac{1}{4}$ "**
 Fresh Water " " **1'-5"**
 Tropical " " **1'-5"**
 Winter " " **1'-5"**
 Winter North Atlantic " " **1'-5"**

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.

Trade of ship COASTING SERVICE.

Names of sister ships "EMPIRE RANCHER".

Builder's name and yard number John Harber Ltd - yard No 147.

Owners The Ministry of War Transport.

Fee £ To be charged with first entry.



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Foundation