

EMPIRE FORD 36608
ETC.

Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Index. No. 36900
(For London Office only).
Low. F.R.O. 1146

Ship's Name WESTERHAVEN EX EMPIRE REYNARD KILBRIDE	Official Number 166692	Nationality and Port of Registry NETHERLAND. BRITISH LOWESTOFT	Gross Tonnage 321 315	Date of Build 1942	Port of Survey LOWESTOFT
Moulded Dimensions: Length 130' 0" Breadth 24' 6" Depth 9' 8" TO CENTRE OF RUDDER STOCK 130' 35"				Date of Survey 24-7-42	
Moulded displacement at moulded draught = 85 per cent. of moulded depth 540 tons				Surveyor's Signature <i>Boysell</i>	
Coefficient of fineness for use with Tables .72				Particulars of Classification +100 A.1.	

Depth for Freeboard (D).
Moulded depth ... **9' 8"**
Stringer plate **1' 38** ... **1' 38**
Sheathing on exposed deck ☒
 $T \left(\frac{L-S}{L} \right) =$
Depth for Freeboard (D) = **9' 70**

Depth correction.
(a) Where D is greater than Table depth
(D-Table depth) R = **(9' 70 - 8' 69) 1' 003 = 1' 01"**
(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' 5"**
Standard Round of Beam = $\frac{B \times 12}{50} =$ **5' 88"**
Ship's Round of Beam = **7"**
Difference **EXCESS** = **1' 12**
Restricted to ☒
Correction = $\frac{\text{Diff}^{\circ}}{4} \times \left(1 - \frac{S_1}{L}\right) = \frac{1' 12}{4} \times 6064 = -17"$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
Poop enclosed <i>amin</i> ...	36' 97"	36' 97"	6' 66"	<input checked="" type="checkbox"/>	36' 97"
" overhang ...	<input checked="" type="checkbox"/>				
R.Q.D. enclosed ...	<input checked="" type="checkbox"/>				
" overhang ...	<input checked="" type="checkbox"/>				
Bridge enclosed ...	<input checked="" type="checkbox"/>				
" overhang aft ...	<input checked="" type="checkbox"/>				
" overhang forward ...	14' 34"	14' 34"	5' 0"	5' 06"	11' 95"
F'cle enclosed <i>amin</i> ...	14' 34"				
" overhang ...	<input checked="" type="checkbox"/>				
Trunk aft ...	<input checked="" type="checkbox"/>				
" forward ...	<input checked="" type="checkbox"/>				
Tonnage opening aft ...	<input checked="" type="checkbox"/>				
" " forward ...	<input checked="" type="checkbox"/>				
Total ...	51' 31"	51' 31"			48' 92"

Standard Height of Superstructure **6' 0"**
" " R.Q.D. ☒
Deduction for complete superstructure **19' 035"**
Percentage covered $\frac{S}{L} =$ **39' 36**
" " $\frac{S_1}{L} =$ **39' 36**
" " $\frac{E}{L} =$ **37' 53**
Percentage from Table, Line A. **21' 40**
(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 = **19' 035" x .214 = -4' 07"**

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product
A.P. ...	23' 04	1		23' 04	24' 1/2	24' 1/2	1		24' 5
1/2 L from A.P. ...	10' 25	4		41' 00	10	10	4		40' 0
2/2 L " ...	2' 53	2		5' 06	2	2	2		4' 0
Amidships ...	-	4		-	-	-	4		-
2/2 L from F.P. ...	5' 07	2		10' 14	5	5	2		10' 0
1/2 L " ...	20' 50	4		82' 00	22	22	4		88' 0
F.P. ...	46' 07	1		46' 07	50	50	1		50' 0
Total ...				207' 31					216' 5

Mean actual sheer aft = **DEFICIENT BUT > 75%**
Mean standard sheer aft

Mean actual sheer forward = **EXCESS**
Mean standard sheer forward

Length of enclosed superstructure forward of amidships = **NIL**
" " aft of " = **NIL**

Correction = $\frac{\text{Difference between sums of products}}{18} \left(.75 - \frac{S}{2L} \right) = \frac{9' 19}{18} \times (.75 - .1968) = -2' 8$
If limited on account of midship superstructure. **YES. NIL**

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.

Ft.
Depth to Freeboard Deck = **9' 70**
Summer freeboard = **8' 85**
Moulded draught (d) = **8' 85**

Deduction for Tropical freeboard and addition for
Winter freeboard = $\frac{d}{4}$ inches = **2' 21' 2 1/4**
Addition for Winter North Atlantic Freeboard (if required) = **4' 1/4**

Deduction for Fresh Water.

Displacement in salt water at summer load water line

$\Delta =$ **590**

Tons per inch immersion at summer load water line

$T =$ **6.6**

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

$\frac{d}{4} = \frac{2' 21' 2 1/4}{4} = 2' 21' 2 1/4$
 $\frac{\Delta}{40T} = \frac{590}{40 \times 6.6} = 2' 23' 5$

TABULAR FREEBOARD corrected for Flush Deck (if required)

Correction for coefficient $\frac{.75 + .68}{1.36} = \frac{1.40}{1.36}$

Depth Correction ... **1' 01**
Deduction for superstructures ... **4' 07**
Sheer correction ... **-**
Round of Beam correction ... **17**
Correction for Thickness of Deck amidships ... **-**
Other corrections, scantlings, etc. ... **-**

13' 04
13' 42

	+	-
Depth Correction	1' 01	-
Deduction for superstructures	-	4' 07
Sheer correction	-	-
Round of Beam correction	-	17
Correction for Thickness of Deck amidships	-	-
Other corrections, scantlings, etc.	-	-
	1' 01	4' 24

Summer Freeboard = **10' 19**

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

Tropical Fresh Water Line above Centre of Disc	4' 1/2 ... 114 mm
Fresh Water Line	2' 1/4 ... 57
Tropical Line	2' 1/4 ... 57
Winter Line below	2' 1/4 ... 57
Winter North Atlantic Line	4' 1/4 ... 108

Tropical Fresh Water Freeboard	0' 10' 1/4 ... 260 mm
Fresh Water	0' 5' 3/4 ... 146
Tropical	0' - 8" ... 203
Winter	0' - 8" ... 203
Winter North Atlantic	1' - 2' 1/2 ... 368

1-7 AUG 1942

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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.

FORECASTLE EQUIVALENT BULKHEAD.

$$\frac{3.58 \times 4.0}{9.83} = 1.46 \quad \text{No OVERHANG.}$$

$$\frac{15.80}{14.34} = \text{EQUIVALENT ENCLOSED LENGTH.}$$

POOP EQUIVALENT BULKHEAD

$$\begin{aligned} \text{LENGTH AT SIDE} &= 35.80' \\ + \frac{2}{3} \times 1.75 &= 1.17' \\ \text{EQUIVALENT LENGTH} &= 36.97' \end{aligned}$$

omit

Trade of ship.....

Names of sister ships.....

Builder's name and yard number.....

Owners.....

Fee £.....

omit



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