

EMPIRE HARP
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Lloyd's Register of Shipping.

SURVEYS FOR FREEBOARD.

(COMPUTATION FOR STEAMER, SAILING SHIP, TANKER.)

Ship's Name STEAM TANKER EMPIRE FAUN	Official Number 169080	Nationality and Port of Registry BRITISH GOOLE.	Gross Tonnage 846	Date of Build 1943.	Port of Survey HULL
Moulded Dimensions: Length 185.5' Breadth 31.25' Depth 14.0' To CENTRE OF RUDDER STOCK					Date of Survey DURING CONSTRUCTION AT GOOLE.
Moulded displacement at moulded draught = 85 per cent. of moulded depth 1440 tons T.P. INCH 11.39					Surveyor's Signature [Signature]
Coefficient of fineness for use with Tables .731					Particulars of Classification 100A1. (CONTINGENT) "CARRYING PETROLEUM IN TANK"

Depth for Freeboard (D).	Depth correction.	Round of Beam correction.
Moulded depth ... 14.0	(a) Where D is greater than Table depth (D - Table depth) R = (14.04 - 12.37) 1.426 = + 2.38"	Moulded Breadth (B) 31.25
Stringer plate04	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = 1.67	Standard Round of Beam = $\frac{B \times 12}{50} =$ 7.5
Sheathing on exposed deck NIL.	If restricted by superstructures ✓	Ship's Round of Beam = 7.5"
$T \left(\frac{L-S}{L} \right) =$		Difference ✓
Depth for Freeboard (D) = 14.04		Restricted to
		Correction = $\frac{\text{Diff}}{4} \times \left(1 - \frac{S}{L} \right) =$ NIL.

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S _i)	Height	Height Correction	Effective Length (E)	
Poop enclosed Equi. ...	71.08	71.08	7.0	✓	71.08	Standard Height of Superstructure 6.0'
.. overhang ...	64.95				70.58	" " R.Q.D. ✓
R.Q.D. enclosed ...						Deduction for complete superstructure 24.55"
.. overhang ...						Percentage covered $\frac{S}{L} =$ 49.56
Bridge enclosed ...						" " $\frac{S_i}{L} =$ 73.55
.. overhang aft ...						" " $\frac{E}{L} =$ 62.27
.. overhang forward ...						Percentage from Table, Line A. Tanker 54.50
Fore enclosed OPEN ...	20.87	19.71	7.0	✓	20.87	(corrected for absence of forecastle (if required)) ✓
.. overhang ...						Percentage from Table, Line B. ✓
Trunk enclosure EXPANSION ...	94.10	45.64	3.25	3.25	24.72	(corrected for absence of forecastle (if required)) ✓
.. forward ...						Interpolation for bridge less than 2L (if required) ✓
Tonnage opening aft ...						Deduction = 24.55 × .545 = - 13.38.
.. forward ...						
Total ...	91.95	136.43			115.51	

SHEER CORRECTION.

Station	Standard Ordinate	S	M	Product	Actual Ordinate	Effective Ordinate	S	M	Product	
A.P. ...	28.55	1		28.55	42.4	42.25	1		42.25	Mean actual sheer aft =
1/4 L from A.P. ...	12.705	4		50.82	18.78	18.875	4		75.50	Mean standard sheer aft =
1/2 L " ...	3.14	2		6.28	4	4.00	2		8.00	} Excess
Amidships ...	-	4		-	NIL.	-	4		-	
3/4 L from F.P. ...	6.28	2		12.56	7	7.00	2		14.00	Mean actual sheer forward =
1/4 L " ...	25.41	4		101.64	30.4	30.25	4		121.00	Mean standard sheer forward =
F.P. ...	57.10	1		57.10	75	75.00	1		75.00	} NIL.
Total ...				256.95					335.75	

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{75-S}{2L} \right) = \frac{78.80}{18} \left(\frac{75-24.78}{2} \right) = - 2.20$
If limited on account of midship superstructure. **Tanker.** **.5022** If limited to maximum allowance of 1 1/2 ins. per 100 ft. **✓**

Deduction for Tropical Freeboard.	Deduction for Fresh Water.	TABULAR FREEBOARD corrected for Fresh Deck (if required)
Addition for Winter and Winter North Atlantic Freeboard.	Displacement in salt water at summer load water line	Correction for coefficient $\frac{.731 \times .68}{1.36} = 1.41 / 1.36$
Depth to Freeboard Deck = 14.04	$\Delta =$ 1636	Depth Correction ... 2.38
Summer freeboard = 0.69	Tons per inch immersion at summer load water line	Deduction for superstructures ... 13.38
Moulded draught (d) = 13.35	T = 11.62	Sheer correction ... 2.20
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 3.34 = 3 1/4	Deduction = $\frac{\Delta}{40 T}$ inches 3.52	Round of Beam correction ... -
Addition for Winter North Atlantic Freeboard (if required) =	McDURRER Ext. Displ. 13.3 16.22 11.61	Correction for Thickness of Deck amidships ... -
	13.9 16.92 11.64	Other corrections, scantlings, etc. ... -
	12.9 15.53 11.5	2.38 15.58 -13.20
		Summer Freeboard = 8.26

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

Tropical Fresh Water Line above Centre of Disc ...	6 3/4
Fresh Water Line " " ...	3 1/2
Tropical Line " " ...	3 1/4
Winter Line below " " ...	3 1/4
Winter North Atlantic Line " " ...	3 1/4

Tropical Fresh Water Freeboard ...	0' - 8 1/4"
Fresh Water " " ...	0' - 1 1/2"
Tropical " " ...	0' - 4 3/4"
Winter " " ...	0' - 5"
Winter North Atlantic " " ...	0' - 1 1/2"

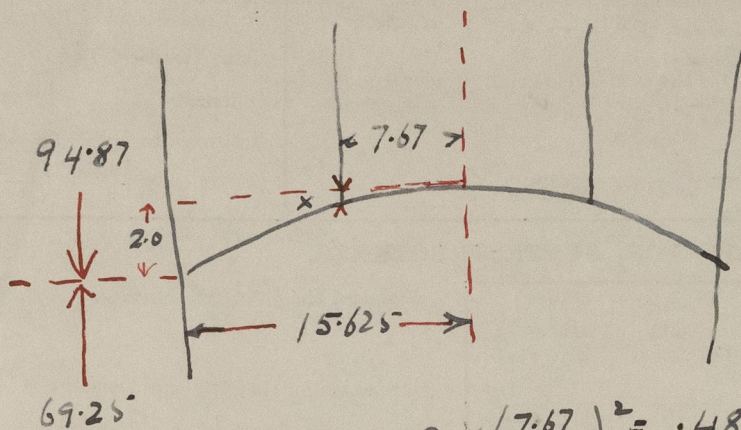
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EMPIRE FAUN

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.

Length of Poop: A. Side length 6"
 At Centre: $2 \times \frac{2}{3} = 1' - 4"$
 At Side: 69' - 39"
 Equi. Enclosed: $70' - 7" - 71' - 1"$

Length of Trunk: $\frac{70.58}{20.87} \text{ (ft)} \text{ (ft)}$
 $\frac{92.45}{185.50} \text{ (L)}$
 Difference = $93.05 \times \frac{15.33}{31.25} = 45.65$



$$x = 2 \times \left(\frac{7.67}{15.625} \right)^2 = .48 \text{ ft}$$

$$\therefore \text{equivalent length of Trunk} = 94.87 - 2 + \frac{.48}{3} = 93.03$$

$$93.03 \times \frac{15.33}{31.25} = 45.64$$

Trade of ship: HOME TRADE.
 Names of sister ships: SIMILAR VESSEL TO EMPIRE HARP HULL FREEBOARD REPORT N° 1762. (EXCEPT THAT POOP IS LENGTHENED AND BRIDGES AND SHIPS DISPOSED WITH IN N° 389 SHIP EMPIRE FAUN)
 Builder's name and yard number: GOOLE SHIPBUILDING & REPAIRING CO. LTD, GOOLE, N° 389 SHIP.
 Owners: MINISTRY OF WAR TRANSPORT.
 Fee £: WILL BE CHARGED WITH FIRST ENTRY.



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