

GLASGOW REPORT No. 69122

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

Ship's Name EMPIRE JUMNA FOSSULARCA	Official Number 180361	Nationality and Port of Registry BRITISH GRANGEMOUTH	Gross Tonnage 2370	Date of Build 1944	Port of Survey GRANGEMOUTH
Moulded Dimensions: Length 287'54 Breadth 44'0 Depth 19'5 [CR. OF RUDDER STOCK TO FORE PERP.]				Date of Survey WHILST BUILDING	
Moulded displacement at moulded draught = 85 per cent. of moulded depth 4350 tons				Surveyor's Signature James M. Winters	
Coefficient of fineness for use with Tables .726				Particulars of Classification + 100 A.I. CARRYING PETROLEUM IN BULK [CONTEMPLATED]	
Depth for Freeboard (D).		Depth correction.		Round of Beam correction.	
Moulded depth	19'5	(a) Where D is greater than Table depth (D - Table depth) R = (19.54 - 19.17) × 2.2/2 = +.82 ✓		Moulded Breadth (B)	44'0
Stringer plate ..0'46"04	.37		Standard Round of Beam = $\frac{B \times 12}{50} =$	10.56
Sheathing on exposed deck NONE	✓	(b) Where D is less than Table depth (if allowed) (Table depth - D) R = ✓		Ship's Round of Beam 6" =	6.00
T $\left(\frac{L-S}{L}\right) =$		If restricted by superstructures ✓		Difference	4.56
Depth for Freeboard (D) =	19.54			Restricted to	✓
				Correction = $\frac{\text{Diff}^*}{4} \times \left(1 - \frac{S_1}{L}\right) =$	$\frac{4.56}{4} \times .2942 = +.33$

DEDUCTION FOR SUPERSTRUCTURES.

	Mean Covered Length (S)	Equivalent Enclosed Length (S ₁)	Height	Height Correction	Effective Length (E)
POOP enclosed	75.21	75.21	7.5	-	75.21
" overhang	72.54				
R.Q.D. enclosed	75.38				
" overhang					
Bridge enclosed					
" overhang aft					
" overhang forward					
F'cle enclosed	37.0	37.00	6.5	-	37.00
" overhang					
Trunk aft	178.0	90.74	6.5	-	90.74
" forward	175.16		(SEE SKETCH)		
Tonnage opening aft					
" forward					
Total	112.21	202.95			202.95

Standard Height of Superstructure 6.375 ✓

" " R.Q.D.

Deduction for complete superstructure 34.50 ✓

Percentage covered $\frac{S}{L} = 39.02$

" " $\frac{S_1}{L} =$

" " $\frac{E}{L} =$ } 70.58 ✓

Percentage from Table, Line A. TANKER. 63.71 ✓
(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 = $34.50 \times .6371 = -21.98$ ✓

SHEER CORRECTION.

Station	Standard Ordnate	S M	Product	Actual Ordnate	Effective Ordnate	S M	Product
A.P. ...	38.75	1	38.75	39"	39.00	1	39.00
$\frac{1}{2}$ L from A.P. ...	17.245	4	68.98	14"	14.00	4	56.00
$\frac{3}{8}$ L " ...	4.265	2	8.53	0"	-	2	-
Amidships ...	-	4	-	0"	-	4	-
$\frac{3}{8}$ L from F.P. ...	8.53	2	17.06	SKETCH OVER 4 $\frac{1}{16}$ "	4.19	2	8.38
$\frac{1}{8}$ L " ...	34.49	4	137.96	SEE 40 $\frac{3}{8}$ "	40.87	4	163.48
F.P. ...	77.50	1	77.50	81 $\frac{5}{16}$ "	81.31	1	81.31
Total ...			348.78				348.17

Correction = $\frac{\text{Difference between sums of products}}{18} \left(\frac{.75 - \frac{8}{2L}}{.5549} \right) = \frac{.61}{18} \left(\frac{.75 - .1951}{.5549} \right) = +.02$
 If limited on account of midship superstructure. If limited

$$\frac{\text{Mean actual sheer aft}}{\text{Mean standard sheer aft}} = .784$$
$$\frac{\text{Mean actual sheer forward}}{\text{Mean standard sheer forward}} = \text{Excess.}$$

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

		aft of		=
		<u>SHEER AFT.</u>		
38.75	1	38.75	39.00	1
17.245	3	51.73	14.00	3
4.265	3	12.79	-	3
-	1	-	-	1
		<u>103.27</u>		<u>81.00</u>

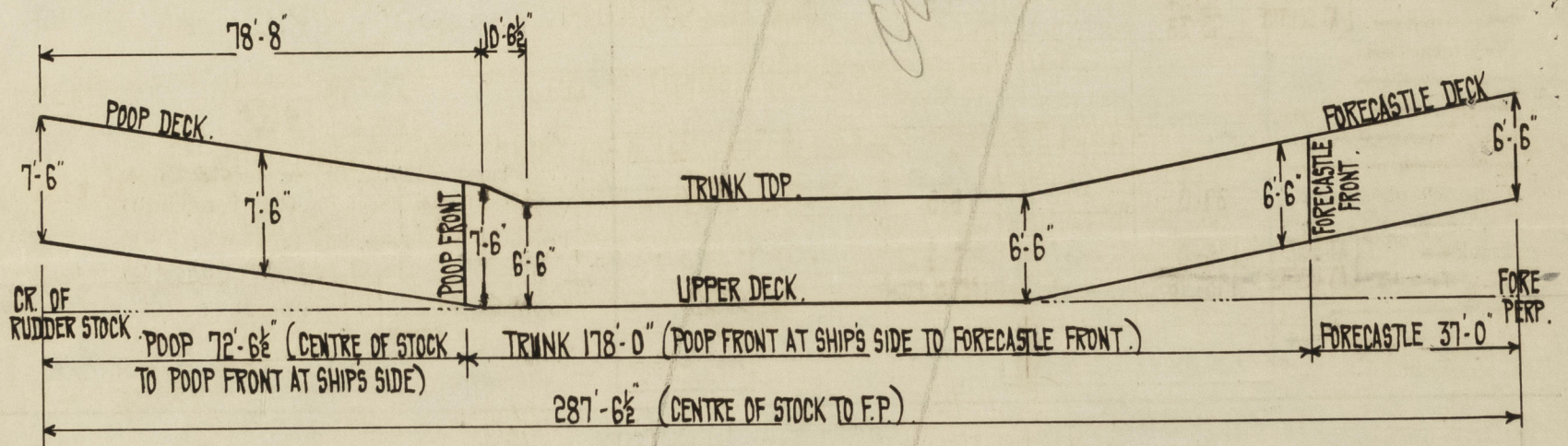
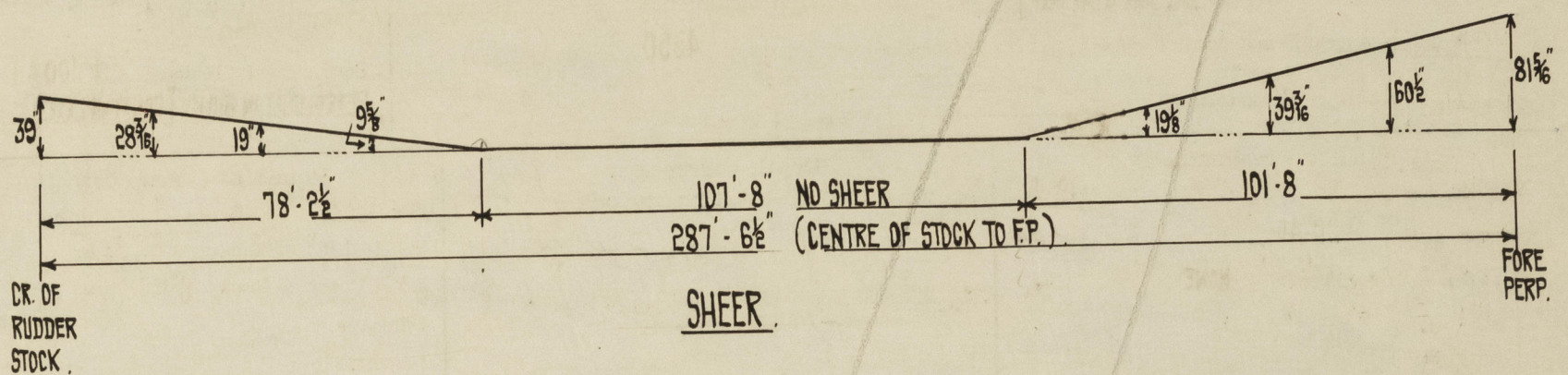
If limited to maximum allowance of $1\frac{1}{2}$ ins. per 100 ft. ✓

Deduction for Tropical Freeboard.		Deduction for Fresh Water.		TABULAR FREEBOARD corrected for Flush Deck (if required)		38.60
Addition for Winter and Winter North Atlantic Freeboard.		Displacement in salt water at summer load water line		Correction for coefficient $\frac{.726 + .68}{1.36} = \frac{1.406}{1.36}$		39.91
Depth to Freeboard Deck	= Ft. 19.54	$\Delta =$	4810			
Summer freeboard	= 1.58	Tons per inch immersion at summer load water line		Depth Correction ...	82	-
Moulded draught (d)	= 17.96	$T =$ 25.08		Deduction for superstructures ...	-	21.98
Deduction for Tropical freeboard and addition for Winter freeboard = $\frac{d}{4}$ inches = 4.49 = 4 1/2"		Deduction = $\frac{\Delta}{40 T}$ inches = $\frac{4810}{40 \times 25.08} = 4.79 = 4 3/4"$		Sheer correction02	-
Addition for Winter North Atlantic Freeboard (if required) = 4.49 + 2.88 = 7.37 = 7 1/4"		DRAUGHT. EX. DISP. (TONS S.W.) T.P.I.		Round of Beam correction33	-
		14'-0" 3623 24.05		Correction for Thickness of Deck amidships ...	-	-
		16'-0" 4207 24.47		Other corrections, scantlings, etc. ...	-	-
		18'-0" 4804 25.08			1.17	21.98
						- 20.81
					Summer Freeboard = 19.10	

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

Tropical Fresh Water Line above Centre of Disc ...	9 1/4"	Tropical Fresh Water Freeboard ...	0' - 9 3/4"
Fresh Water Line " " ...	4 3/4"	Fresh Water " " ...	1' - 2 1/4"
Tropical Line " " ...	4 1/2"	Tropical " " ...	1' - 2 1/2"
Winter Line below " " ...	4 1/2"	Winter " " ...	1' - 11 1/2"
Winter North Atlantic Line " " ...	7 1/4"	Winter North Atlantic " " ...	2' - 2 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.



HEIGHT OF ERECTIONS

POOP $\frac{75.38}{72.54} \times \frac{2.84 \times \frac{2}{3}}{2.84} = 1.89$ $\frac{72.54}{2.62} = 4 \times \frac{2}{3}$ $\frac{75.21}{75.21}$

TRUNK $\frac{4.00}{2.83} = 1.17$ $\frac{175.17}{174.00} = 1.006$ $1.17 \times \frac{1}{3} = 0.39$ $\frac{174.39}{32.67} = 5.34$ $\frac{141.72}{141.72}$

FORECASTLE $\frac{23.33 + 18.67}{2 \times 44} = 15.59$ $\frac{141.72 \times 23.33}{44} = 75.15$ $\frac{90.74}{90.74}$

Trade of ship INTERNATIONAL

Names of sister ships 'EMPIRE PYM' [GRANGEMOUTH DOCKYARD'S N°448 - SEE GLASGOW REPORT N°67077]

Builder's name and yard number MESSRS THE GRANGEMOUTH DOCKYARD CO. LD. N°458

THE MINISTRY OF WAR TRANSPORT

Est. Fee £ 12 0 0

Freeboard Request Form 9 attached.
Plans of Midship Section and Profile and Decks enclosed for reference.



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