

RECEIVED

27 SEP 1943

IN D.O.

## STEEL STEAMER OR MOTORSHIP.

Received at London Office.

27 SEP 1943

State if Report has been sent on the Freeboard of the Vessel

yes

State if Report is sent on the Machinery of the Vessel

yes

FLAMMULINA

Date of completion of report

23/9/43

Port of

Belfast

No.

13590.

Survey held at

Belfast

Date First Survey

10<sup>th</sup> February 1942

Last Survey

16<sup>th</sup> September 1943

On the

(State if Machinery fitted Aft and if Single, Twin or Triple Screw)

Single Screw Motor Tanker EMPIRE INDUSTRY

State Type

(Full Scantling, Complete Superstructure with or without Tonnage Openings)

Full Scantling

State Type of Erections

Poop Br. Side

TONNAGE under Tonnage Deck ...

7229.82

Do. of space or spaces between Tonnage Dk. and Upper Dk.

Total

7229.82

Gross Tonnage

8203.00

Net Tonnage

4774.99

REGISTERED DIMENSIONS.

FEET

Length

465.6

Breadth

59.5

Depth

33.85

CLASS

400 A1-barring

State if with freeboard as condition of Class

No

Length from fore part of stem to after part of stern post on summer L.W.L. See Sec. 3 (1a)

FEET

460

Breadth (greatest moulded)

B 59

Depth, at middle of length from top of keel to top of beam at side of uppermost continuous deck. See Sec. 3 (1c)

D 34

1st Longitudinal Number (L x D)

15640

2nd Numeral L x (B + D)

42780

Framing Depth "d," at middle of length. See Sec. 3 (1d)

Proportions—Depth to Length—Uppermost continuous deck to top of keel

13.52

Do. Long Bridge to top of keel

Draught Moulded

27-4 1/4

Built at

Belfast

Launched

4<sup>th</sup> May 1943

Yard No. 1159

Builders

Harland &amp; Wolff Ltd

Owners

Ministry of War Transport

Managers

Gov. Harrison &amp; Co.

(Where necessary to be entered in Reg. Book)

Residence

Port of Registry

Belfast

If surveyed while building, afloat, or in dry dock

building afloat and in dry dock

## FRAMES, DOUBLE BOTTOM AND BEAMS.

	INCHES IN SHIP.	Any Departure from Approved Plans to be Noted.		INCHES IN SHIP.	Any Departure from Approved Plans to be Noted.
FRAMES, Spacing amidships.....	3 1/2		Bracket Floors, Frame .....	✓	
" " from 1/2 length amidships to Collision bulkhead.....	27		" " Reversed Frame.....	✓	
" " in peaks .....	24		" " Vertical Struts .....	✓	
SIDE FRAMING.			Centre Girder, depth and thickness amidships	60 54 46	✓
Frame Amidships, Angle, E or F	10 3 1/2 7/16	✓	" " top Angles .....	4 4 9/16	✓
" " Extends up to.....	11 3 1/2 7/16	✓	" " bottom Angles.....	4 4 9/16	✓
Reversed Frame Amidships, Angle .....	✓		" " Gussets, spacing and scantling abaft 1/2 len. from stem.....	3 5/16	✓
" " Extends up to .....	✓		" " Gussets, spacing and scantling from forward 1/2 len. from stem to Panting Area .....	10 42	✓
Depth of Framing Girder.....	10	✓	Margin Plate depth (excl. of flange) and thickness.....	54	✓
Frames in Uppermost Continuous 'tween Decks, Angle, E or F .....	✓		" " Vertical Angle to Tank side Bracket abaft 1/2 len. from stem .....	6 6 50	✓
" " Second 'tween Decks, Angle, E or F .....	✓		" " Vertical Angle to Tank side Bracket from forward 1/2 len. from stem to Panting Area .....	✓	
" " Third 'tween Decks, Angle, E or F .....	✓		" " Gussets, spacing and scantling abaft 1/2 len. from stem.....	✓	
" " Extends up to.....	11 3 1/2 7/16	✓	" " Gussets, spacing and scantling from forward 1/2 len. from stem to Panting Area .....	✓	
Diameter and Spacing of Rivets through Frame and Shell Plating amidships .....	8 3 1/2 7/16	✓	Tank Side Brackets, height above base line at toe of Frame and thickness	46 ft 3"	✓
State if Frame Joggled.....	yes		INNER BOTTOM PLATING.		
Are the scantlings and arrangements in the Panting Area in accordance with the Rules and/or as approved? .....	on app	✓	Breadth and thickness of Middle Line Strake .....	1 1/8	✓
Are the scantlings and arrangements in way of the Bottom Forward in accordance with the Rules and/or as approved? .....	on app	✓	Thickness of remainder in Hold .....	52	✓
SINGLE BOTTOM.			Are Rule requirements complied with regarding increases of scantlings in way of double bottom in E. & B. space and framing in Bunkers and Boiler Room? .....	on app	✓
Floors, Depth and thickness at mid-line in Holds.....	See		BEAMS.		
Height of Brackets at side above base line at toe of frame.....	See		Uppermost Continuous Deck, amidships, in way of poop .....	8 3 1/2 7/16	✓
Middle Line Keelson, on Floors, Angles, E or F .....	Range		" " " in way of bridge, Angle, E or F .....	8 3 1/2 7/16	✓
" " Through Plate or Inter-costal Plate .....	framing		" " Spacing .....	every	✓
" " Foundation Plate on Floors .....	plan		Second Deck, amidships, Angle, E or F .....	8 3 1/2 437	✓
" " Flat Plate Keel Angles .....	✓		" " Spacing .....	9 3 1/2 437	✓
Side Keelsons, No. each side.....	✓		" " Third Deck, amidships, Angle, E or F .....	8 3 1/2 7/16	✓
" " thickness of Inter-costal Plate.....	✓		" " Spacing .....	every	✓
" " Angles .....	✓		Fourth Deck, amidships, Angle, E or F .....	✓	
DOUBLE BOTTOM. in motor space			" " Spacing.....	✓	
Solid Floors, thickness and spacing .....	46 3 1/2 30 1/2		Poop Deck, Angle, E or F .....	8 3 1/2 35	✓
" " Are Frame and Reversed Frame joggled? .....	Yes		" " Spacing.....	every	✓
Bracket Floors, breadth and thickness at middle line .....	✓		Bridge Deck, Angle, E or F .....	8 3 1/2 437	✓
" " breadth and thickness at margin plate.....	✓		" " Spacing.....	every	✓



## PILLARS AND DECKS.

	INCHES IN SHIP.	Any Departure from Approved Plans to be Noted.		INCHES IN SHIP.	Any Departure from Approved Plans to be Noted.
PILLARS, No. of Rows .....	Two		Stringer Plate, <del>breadth and thickness in way of Bridge</del> .....	36 ✓	
" in 'tween Decks, Size and Spacing .....	Longitudinal		Thickness of Plating abreast Deck openings in way of Wells .....	36 ✓	
" " " " " "	bulkheads ✓		Thickness of Plating abreast Deck openings in way of Bridge .....	34 ✓	
" in Holds " " " "			Thickness of Plating within line of openings...	✓	
" " " " " "			If Sheathed, material and thickness .....	✓	
Long Centre Line Bulkhead. 11 ft P15 Ba	10 3/4 7/16 ✓		Third Deck. deep tank top ✓		
Stiffeners and Spacing 2 hor girders 30" x 42, 26" x 42 ✓	3 1/2 ✓		Stringer Plate, breadth and thickness .....	42 ✓	
Plating, thickness of .....	42 vert ✓		If Plated, state thickness .....	38 ✓	
STRINGERS AND DECKS.			Fourth Deck.		
Uppermost Continuous Deck.			Stringer Plate, breadth and thickness .....	✓	
Stringer Plate, breadth and thickness in Wells	97 x 87. 80 ✓		If Plated, state thickness .....	✓	
" " " " in way of Bridge	97 x 87 ✓		Poop Deck.		
" Angle in Wells .....	6 6 5/8 ✓		Stringer Plate, <del>breadth and</del> thickness .....	34 ✓	
Thickness of Plating abreast Deck openings in way of Wells <del>cc. continuous strakes</del> ✓	76 ✓		Plating, Sheathing, material and thickness ...	26 ✓	
Thickness of Plating abreast Deck openings in way of Bridge .....	✓		Bridge Deck.		
Thickness of Plating within line of openings ... <del>cc in way of oil tight hatches</del> ✓	58 ✓		Stringer Plate, <del>breadth and</del> thickness .....	43 ✓	
If Sheathed, material and thickness .....	no ✓		Plating, <del>Sheathing material and</del> thickness ...	34 ✓	
Second Deck. aft			Forecastle Deck.		
Stringer Plate, <del>breadth and</del> thickness in Wells	40 ✓		Stringer Plate, <del>breadth and</del> thickness .....	37 ✓	
			Plating, <del>Sheathing material and</del> thickness...	36 ✓	

## SHELL PLATING.

SCANTLINGS.					RIVETING.								
STRAKES.	AS IN VESSEL.				ANY DEPARTURE FROM APPROVED PLANS TO BE NOTED.	EDGES.			BUTTS.				
	AMIDSHIPS.		FORWARD.	AFT.		State if jogged?	SINGLE OR DOUBLE.	RIVETS.		No. OF ROWS OF RIVETS.	RIVETS.		STRAPPED OR LAPPED.
	Breadth.	Thickness.	Thickness.	Thickness.				Diam.	Spacing cr. to cr.		Diam.	Spacing cr. to cr.	
	Inches.	Inches.	Inches.	Inches.			Inches.	Inches.		Inches.	Inches.		
Flat Plate Keel.....	57	96	78	78		double	1"	4	five	1 1/8	4 1/2	lapped	
„ Dblg. (if any)													
Bottom Plating, No. of Strakes ..... 14		67, 64	74, 50	50, 50		double	7/8	3 1/2	four	7/8	3 1/2	lapped	
Bilge Plating, No. of Strakes ..... 1		64	50	50		double	7/8	3 1/2	four	7/8	3 1/2	lapped	
Side Plating, No. of Strakes ..... 3		64	50	50		double	7/8	3 1/2	four	7/8	3 1/2	lapped	
Upper Deck, Sheer- strake in Wells.....	67	99	50	50					five	1 1/8	5	lapped	
Upper Deck, Sheer- strake in Bridge .....	67	99	50	50					five	1 1/8	5	lapped	
Strake below Sheer- strake in Wells.....	84	76	50	50		double	1	4	four	1	4	lapped	
Strake below Sheer- strake in Bridge .....	84	76	50	50		double	1	4	four	1	4	lapped	
Poop Side Plating.....				40		one strake			two	3/4	2 5/8	lapped	
Bridge Side Plating.....		43				one strake			two	3/4	2 5/8	lapped	
Forecastle Side Plating			43			single	3/4	3	one	3/4	2 5/8	lapped	

## WATERTIGHT BULKHEADS.

Total No. of W.T. BULKHEADS in Vessel—  
 Extending to Upper Deck (Sec. 3 c) 17 ✓  
 „ Deck next below ✓  
 As per Rule ordinary cargo 7

## FORGINGS AND CASTINGS.

	Casting or Forging.	Scantlings.	Maker's Name.	Any Departure from Approved Plans to be Noted.
KEEL, Bar .. <i>Flat Red</i>				
STEM .. <i>rolled</i>	<i>10 1/4</i>	<i>2 3/4</i>	✓	
STERN FRAME {	Propeller Post ..	<i>Cast</i>	<i>as</i>	<i>Beardmore</i>
{	Rudder ..	<i>std</i>	<i>app</i>	
Speed of Vessel ..				
RUDDER—Type ..	<i>Simpler Type</i>	<i>Beardmore</i>	✓	
" A × D ..	<i>rudder, double</i>	✓		
" Diam. of head ..	<i>plate, built</i>			
" Mainpiece at top pintle ..	<i>cast steel frame</i>	✓		
" " heel ..	<i>forged steel</i>	✓		
" how constructed ..	<i>semi balanced</i>	✓		
" double or single plate ..	<i>as app. dia 8</i>			
" coupling, vertical or ..	<i>std</i>	<i>11"</i>		
" horizontal ..	<i>double vertical</i>			

[illegible]

STEEL.

Manufacturer's Name or Trade Mark of the Steel used in the construction of the Vessel (state process of manufacture). *Colville's, Steel Co. Scotland Lanarkshire,*

Has the Steel been tested as required by the Rules? *Yes* ✓



Rp 1\*.

Empire Industries Htw 107159

## PARTICULARS OF LONGITUDINAL FRAMING.

FRAMING.		AMIDSHIPS.			ENDS.			AMIDSHIPS.			ENDS.			RIVETING.		RIVETS IN BRACKETS TO BULKHEADS.	
		In Ship.			In Ship.			Per Rule or as approved.			Per Rule or as approved.			Rivets in Longitudinal Frames.		Spacing of Rivets on each side of Transverses and Bulkheads.	
		Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Diam.	Speng.	Inches.	Number.
Framing of L, L or C .....		as approved 52															
Frames in Bridge 'tween Decks ...																	
Frames from Uppermost Continuous Deck Inlet Centre Girders No. 1		Plate 40" x 1/2"			Keel bars 4 x 4 x 50			top bars 3 1/2 x 3 1/2 x 7/16									
" 2		17 x 62 x 1/2 x 1/2 x 68			17 x 62 x 1/2 x 1/2 x 68			as app'd						7/8 5 1/4		3 1/8 for 11 Rands	
" 3		Xo			Xo									Xo		Xo	
" 4		Xo			Xo									Xo		Xo	
" 5		Long Bulk plating 42 vert stiff			10 x 3 1/2 x 7/16 B-a spaced 31 1/2"												
" 6		17 x 62 x 1/2 x 1/2 x 68			17 x 62 x 1/2 x 1/2 x 68									7/8 5 1/4		3 1/8 for 11 Rands	
" 7		Xo			Xo									"		"	
" 8		Xo			Xo									"		"	
" 9		Xo			Xo									"		"	
" 10																	
" 11																	
" 12																	
" 13																	
" 14																	
" 15																	
" 16																	
Spacing of Longitudinal Frames		Amidships 1-4			33"			33"									
		At Ends 6-9			30"			30"									
Double Bottoms L, L or C		Tank Top Longitudinals															
		Bottom															
Spacing of Longitudinals		Amidships															
		At Ends...															
Transverses.																	
In Bridge 'tween Decks		Depth and Thickness															
		Face Angles															
		Lugs to Shell*															
In Upper 'tween Decks		Depth and Thickness															
		Face Angles															
		Lugs to Shell*															
In Hold.		Depth and Thickness			40 x 1/2 at centre			as amidships									
		Face Angles			37 1/2 at wing			"									
		Lugs to Shell*			8 3 1/2 7/16 B-a			"									
					double at centre, single at wing			"									
					6 6 1/2 joggled			"									
					3 1/2 3 1/2 7/16			"									
					44			"									
					10'-6"			"									
Spacing of Transverse Frames		State if joggled or liners.															
Longitudinal Beams of L, L or C		Bridge Deck ...															
		Upper			9 3 1/2 7/16 B-a			9 3 1/2 7/16 B-a									
		Second															
		Third															

The particulars of framing in peaks (if ordinary), Floors, Centre Girder, Side Girders and Margin Plate and their angle attachments, etc., to be entered in their respective places provided for on the Report Forms.

NOTE:—This slip to be pasted on the fourth page of the Report, and reference to same to be made under framing, etc., on the first page.







GENERAL REMARKS—(The Surveyor should state the Number of Report and Name of any Sister Vessel. Plans showing Vessel as built should be forwarded and a List of the Plans should be embodied.)

This vessel is a sister vessel to the same Builder Empire Bombardier No 1158; Empire Benefet No 1164 etc.

The following forging and casting reports are enclosed.  
Stern frame; back post; rudder stock; tiller 4 certificates  
also certificates for masts & derricks 4 certificates.

PARTICULARS OF ELECTRIC WELDING (if employed) Side stringers welded to shell throughout; horizontal girders welded to bulkheads throughout; gussets & brackets part welded, angle bolts and corners for air tightness; also minor and non-structural items

SPECIAL NOTATIONS:—Either as part of the vessel's class or for record in the Register Book. old engine; machinery aft, cruiser stern; D.F.; E.S.D.

Particulars of Drop Test of Cast Steel Anchors, viz.:—  
Weight, Surveyor's Initials, Number of Certificate, Date of Test.

1st Bower	Head + pins 48-3-14; J.H.J. (Huc) No 5733	24.8.42
2nd "	do 48-2-0 J.H.J.	No 5146 28.8.42.
3rd "		

PARTICULARS FOR RECORD in the REGISTER BOOK.—Length of Poop 93 ft., R.Q.D. 1 ft., Bridge 46 ft., Forecastle 51 ft.

(in feet and tenths). When the Poop or Forecastle are joined to the B.D., this should be distinctly stated.

Official No. 168529 Signal Letters Extreme Breadth over Belting no belting Over-all Length 483

No. and Material of Decks one deck steel and second deck steel clear of oil cargo tanks

Parts of Bottom of Vessel coated with cement or approved composition none

Particulars of composition (if fitted) and of approval ✓

PARTICULARS OF WATER BALLAST:—(Comprising all tanks which may be used for Water Ballast. (Circ. 1284)  
(Wells are not to be included in the lengths of the tanks, but Cofferdams and Dry Tanks (if tested) are to be included.)

Where Fitted.	Length.	Water Capacity.	Where Fitted.	Length.	Water Capacity.
Double bottom, aft, under engines	69.5	156	Fore peak tank,		130
Double bottom, under Engines and Boilers,			After peak tank,		88
Double bottom, if under Engines only,			Deep tank, aft,		
Double bottom, if under Boilers only,			Deep tank, forward,	24.7	27.5
Double bottom, forward,			Other tanks, if fitted,		
Total length (if continuous) and Capacity			(If necessary furnish further information by sketch.)		

Order for Special Survey No. 908

Date 7/5/41

Dates of Surveys held while building

1940  
Feb 10, 18, 25 Mar 5, 11 Apr 10, 27 May 11, 12, 14, 15, 16, 18, 19, 20, 26 June 1, 5, 10, 13, 15, 29 July 6, 10, 21, 23.  
27, 31 Aug 4, 7, 18, 21, 25, 31 Sept 8, 10, 16, 21, 24, 29 Oct 6, 15, 20, 22, 23, 27 Nov 3, 6, 10, 12, 13, 16, 18, 19  
1941  
24, 25, 26, 28, 30 Dec 3, 4, 5, 8, 11, 12, 14, 19, 18, 21, 23, 31 Jan 4, 5, 8, 12, 19, 25, 26, 27, 28, 29 Feb 1, 2, 3, 5, 8, 9, 10, 11, 15, 16, 19  
22, 23, 24, 25, 26, 27, 28 Mar 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 19, 22, 23, 25, 29, 31 Apr 9, 12, 15, 16, 22, 30  
May 3, 4, 7, 13, 17, 18, 20, 24 June 14, 17, 21, 22 July 5, 16, 19, 20, 21, 30 Aug 2, 4, 6, 9, 10, 12, 13, 16, 18  
20, 23, 24, 25, 26, 27, 30 Sept 1, 2, 3, 6, 7, 8, 9, 10, 11, 14, 16

Total No. of Visits 193