

16 APR 1942

State if Report is sent on the Machinery of the Vessel.....Yes

13th April 1942 Port of ~~Belfast~~

Date First Survey 14. Nov. 1939

Last Survey 1st April 1942

Twin Screw Motorship EMPIRE GRACE

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

Limited draught based on C.S. Rules without tonnage State Type of Erections *Pop. Bridge + Side*
open m. *P. 22 +*

TONNAGE under } 1129492
Tonnage Deck ...

CLASS 100A.1.

State if with freeboard } *Yes*
as condition of Class }
FEET

Built at Belfast

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

Length from fore part of stem to after part of stern } L 572 ✓
post on summer L.W.L. See Sec. 3 (1a)

Launched 25th Aug 1941 Yard No. 1051

Total.....11294.92

Breadth (greatest moulded) _____
Depth, at middle of length from top of keel to top
of beam at side of uppermost continuous
deck. See Sec. 3 (1c) *4. Scantlings*

Builders *Harland & Wolff, Ltd.*

Owners Ministry of War Transport

Tonnage 13477.90

1st Longitudinal Number (L \times D).....= 22031

Managers Shaw, Savill & Albion Co. Ltd
(Where necessary to be entered in Reg. Book)

2nd Numeral $L \times (B + D)$ = 57877

REGISTERED DIMENSIONS.

Framing Depth "d," at middle of length. See } 19.445
Sec. 3 (1d).....

Residence London

Port of Registry.....*Belfast*

FEET
521.4

Proportions—Depth to Length—Uppermost continuous deck to top of keel } 11. 81

If surveyed while building, afloat, or in dry dock

70.4

Do. Long Bridge to }
ton of keel }

building, afloat and in dry dock

40.5

Draught Moulded

	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.....	34 ✓		Bracket Floors, Frame	8 3 1/2 35 ✓	
" " from 1/2 length amidships to Collision bulkhead.....	27 ✓		" " Reversed Frame.....	7 3 35 ✓	
" " in peaks	24 ✓		" " Vertical Struts	10 3 1/2 1/2 ✓	
SIDE FRAMING. <i>holds</i>			Centre Girder, depth and thickness amidships	48 1/2 x 60 ✓	
Frame Amidships, <i>Angle, E or F</i>	12 3 1/2 45 ✓		" " top Angles	4 4 1/2 ✓	
" " Extends up to.....	3 1/4 4 1/2 <i>holds all</i>		" " bottom Angles.....	6 6 1/2 ✓	
Reversed Frame Amidships, Angle	✓		Side Girders, No. each side and thickness.....	two 6 1/2 ✓	
" " Extends up to	✓		Margin Plate depth (excl. of flange) and thickness	48 x 62 ✓	
Depth of Framing Girder.....	12 ✓		" " Vertical Angle to Tank side Bracket abaft 1/4 len. from stem	6 6 1/2 ✓	
Frames in Uppermost Continuous 'tween Decks, <i>Angle, E or F</i>	9 3 1/2 7 1/6 ✓		" " Vertical Angle to Tank side Bracket from forward 1/4 len. from stem to Panting Area Gussets, spacing and scantling abaft 1/4 len. from stem.....	6 6 1/2 ✓	
" " Second 'tween Decks, <i>Angle, E or F</i>	do		" " Gussets, spacing and scantling from forward 1/4 len. from stem to Panting Area	6 6 1/2 ✓	
" " Third	9 3 1/2 7 1/6 ✓		Tank Side Brackets, height above base line at toe of Frame and thickness	77 1/2 x 8 1/2 ✓	
" " from 1/2 len. for'd. to 15% len. from Stem <i>with Rev. A. act. for 1/2 len. 54</i>	12 3 1/2 45 13a ?		INNER BOTTOM PLATING.		
" " in Peaks, <i>Angle, E or F</i>	4 4 1/2 7 ✓		Breadth and thickness of Middle Line Strake.....	60 x 60 ✓	
Diameter and Spacing of Rivets through Frame and Shell Plating amidships	7/8 6 5 1/4 ✓		Thickness of remainder in Holds	52 4 1/2 48 ✓	
State if Frame Joggled.....	<i>Yes, amidships</i> ✓		Are Rule requirements complied with regarding increases of scantlings in way of double bottom in E. & B. and framing in O.F. Bunkers and Boiler Room?.....	<i>Yes</i> ✓	
Are the scantlings and arrangements in the Panting Area in accordance with the Rules and/or as approved?	<i>Yes</i> ✓		BEAMS.		
Are the scantlings and arrangements in way of the Bottom Forward in accordance with the Rules and/or as approved?	<i>Yes</i> ✓		Uppermost Continuous Deck, amidships in Wells, <i>Angle, E or F</i>	10 3 1/2 7 1/6 41 ✓	
SINGLE BOTTOM.			" " in way of Bridge, <i>Angle, E or F</i>	12 3 1/2 45 ✓	
Floors, Depth and thickness at mid-line in Holds.....			" " Spacing	34 ✓	
Height of Brackets at side above base line at toe of frame.....			Second Deck, amidships, <i>Angle, E or F</i>	12 3 1/2 45 ✓	
Middle Line Keelson, on Floors, Angles, <i>E or F</i>			" " Spacing	34 ✓	
" " Through Plate or Inter-costal Plate			Third Deck, amidships, <i>Angle, E or F</i>	12 3 1/2 45 ✓	
" " Foundation Plate on Floors			" " Spacing.....	34 ✓	
" " Flat Plate Keel Angles			Fourth Deck, amidships, <i>Angle, E or F</i>	12 3 1/2 45 ✓	
Side Keelsons, No. each side.....			" " Spacing.....	34 ✓	
" " thickness of Inter-costal Plate.....			Poop Deck, <i>Angle, E or F</i>	9 3 1/2 7 1/6 ✓	
" " Angles			" " Spacing.....	<i>every</i> ✓	
DOUBLE BOTTOM.			Bridge Deck, <i>Angle, E or F</i>	10 3 1/2 7 1/6 ✓	
Solid Floors, thickness and spacing	48 <i>every 3rd</i>		" " Spacing.....	<i>every</i> ✓	
Are Frame and Reversed Frame joggled?	<i>frame only</i> ✓		Forecastle Deck, <i>Angle, E or F</i>	12 3 1/2 45 ✓	
Bracket Floors, breadth and thickness at middle line	36 48 1/2 3 1/2 ✓		" " Spacing.....	<i>all frames</i> ✓	
" " breadth and thickness at margin plate.....	do				

PILLARS AND DECKS.

		INCHES IN SHIP.		Any Departure from Approved Plans to be Noted.	
PILLARS, No. of Rows		Two rows			
,, in 'tween Decks, Size and Spacing		wide spaced			
,, ,, ,, ,, ,,		pillars and			
,, in Holds ,, ,, ,,		girders as			
,, ,, ,, ,, ,,		approved		✓	
Centre Line Bulkhead.					
Stiffeners and Spacing		✓			
Plating, thickness of		✓			
STRINGERS AND DECKS.					
Uppermost Continuous Deck.					
Stringer Plate, breadth and thickness in Wells		74	x	72	✓
,, ,, ,, ,, in way of Bridge		54	x	48	✓
,, Angle in Wells		6	6	5/8	✓
Thickness of Plating abreast Deck openings } in way of Wells		69	✓		
Thickness of Plating abreast Deck openings } in way of Bridge		44	✓		
Thickness of Plating within line of openings...		46	16	38	✓
If Sheathed, material and thickness.....		2" asphalt fm		✓	
Second Deck.					
Stringer Plate, breadth and thickness in Wells		53	x	48	✓
Stringer Plate, breadth and thickness in way of Bridge		59 x 42		app 53"	
Thickness of Plating abreast Deck openings } in way of Wells		44		✓	
Thickness of Plating abreast Deck openings } in way of Bridge		38		✓	
Thickness of Plating within line of openings...		36	16	34	✓
If Sheathed, material and thickness.....		✓			
Third Deck.					
Stringer Plate, breadth and thickness.....		53	x	42	✓
If Plated, state thickness		38	16	30	✓
Fourth Deck.					
Stringer Plate, breadth and thickness.....		58 1/2	x	34	✓
If Plated, state thickness.....		30		✓	
Poop Deck.					
Stringer Plate, breadth and thickness.....		44	x	40	✓
Plating, Sheathing, material and thickness ..		30 not sheathed		26 with 2" asphalt	
Bridge Deck.					
Stringer Plate, breadth and thickness.....		74	x	62	✓
Plating, Sheathing, material and thickness ..		56	53	46	✓
Forecastle Deck.					
Stringer Plate, breadth and thickness.....		37	x	40	✓
Plating, Sheathing, material and thickness...		38	50	inches	✓

SHELL PLATING.

SCANTLINGS.					RIVETING.								
STRAKES.	AS IN VESSEL.				ANY DEPARTURE FROM APPROVED PLANS TO BE NOTED,	EDGES.			BUTTS.				
	AMIDSHIPS.		FORWARD.	AFT.		State if joggled?	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.....	59	.94	.84	.90		double	1	3 7/8	four	1	4"	lapped	
" Dblg. (if any)	✓												
Bottom Plating, No. of strakes 4		.75	.56	.56		do	1	3 7/8	four	1	4"	lapped	
Strake No. of Bilge Plating, No. of strakes 2		.75	.56	.56		do	1	3 7/8	four	1	4"	do	
Strake No. of Bilge Plating, No. of strakes 5		.73	.52	.52		do	7/8	3 1/2	four	7/8	3 1/2	do	
Sheer- Upper Decks.....	72 1/4	-	.90	.90		✓			five	1	4 1/2	do	
Sheer- Upper Deck, strake in Bridge	72	.73	-	-		double	7/8	3 1/2	four	7/8	3 1/2	do	
Strake below Sh. strake in Wells....	72	-	.80	.80		do	1	3 7/8	four	1	4	do	
Strake below Sheer strake in Bridge	72	.73	-	-		do	7/8	3 1/2	four	7/8	3 1/2	do	
Poop Side Plating....						single	7/8	3 1/2	two	3/4	2 5/8	do	
Bridge Side Plating....		.67				double	7/8	3 1/2	four	7/8	3 1/2	do	
			.46			single	7/8	3	two	3/4	2 5/8	do	

AIRTIGHT BULKHEADS.

W
Total No. of W.T. BULKHEADS in Vessel—
Extending to Upper Deck (Sec. 3 c) *one*
Deck next below *8 + cofferdam bulkhead*
7 divisional W.T. bulkheads in upper two decks
A per Rule *8*

FORGINGS AND CASTINGS.

	Casting or Forging.	Scantlings.	Maker's Name.	Any Departure from Approved Plans to be Noted.
KEEL, Bar	✓			
STEM		11 x 2 7/8	Rolled section	✓
STERN FRAME {	Propeller Post	✓		
{	Rudder	Cast stl	as app. Beadmore	
Speed of Vessel		16 Knots		
RUDDER—Type		double plate	semi balanced	
" A x D.				
" Diam. of head		forged 17"	Beardmore	
" Mainpiece at top pintle		shaped	Beardmore	
" " heel		Casting		
" how constructed		Cast frame,	built	
" double or single plate		double	✓	
" coupling, vertical or		vertical	✓	
" horizontal				

		Plating Thickness.	STIFFENERS.				
			VERTICAL.		HORIZONTAL.		
			Scantlings.	Spacing.	Scantlings.	Spacing.	
MIDSHIP	BULKH'D, (Upper 'tween decks	25F	26	5x3x5/16 A	30"	✓	✓
"	" Second "		do	do	do	✓	✓
"	" Third "		30	6x3 1/2 x 5/16 Ba	do	✓	✓
"	" Holds		33 5/8 43	12x4 1/4 x 7/16 A	do	✓	✓
COLLISION	(in Hold)		35 5/8 44	9x3 1/2 x 7/8 Ba	24	3 acmi box beams	
AF' ER PEAK			30 1/8 48	8x3 1/2 x 7/16 ✓ 1x2x2 1/2 26 1/2	24 24 26 1/2	main deck Tunnel "	

Manufacturer's Name or Trade Mark of the Steel used in the construction of the Vessel (state process of manufacture) *open hearth process*

Colvilles, Steel company of Scotland,

Has the Steel been tested as required by the Rules?

EQUIPMENT No.												LETTER / 11		ANCHORS.	
Number of Certificate.	Anchors.	WEIGHT, EX. STOCK.			WEIGHT OF STOCK.			TEST, PER CERTIFICATE.				WEIGHT REQUIRED BY TABLE 53.	Description of Anchor.	Makers.	Where and when tested, and Superintendent.
		Cwts.	qrs.	lbs.	Cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	Cwts.			
99335	1st Bower	105	2	14	stockless			69	10	0	0	104 1/2	Hallo Patent Improved	Hungley Bros	Nelkerton 18.10.40 Reel
99308	2nd "	105	-	-	80			69	2	2	0	104 1/2	do	do	do 12.10.40 do
	3rd "											89			
	Collective weight											298			
99419	Stream	31	0	19	7	3	5	29	11	1	0	31	order any	Hungley Bros	Nelkerton 14.11.40 Reel
HANGERS AND WARPS															

CHAIN CABLES.

Number of Certificate.	Length and size supplied.		Test per Certificate.		WEIGHT OF CHAIN CABLE.			Length and Size per Table 53.		Description.	Makers of Cables.	Where and when tested, and Superintendent.	Material.	Length and Size supplied.		Breaking Test of Steel Wire.	Length and Size per Table 53.			
			Statu-tory.	Break-ing.	Supplied.	Per Rule.	Length.	Diam.	Length.					Cir.	Length.		Cir.			
	Length.	Diam.																Tons.	Cwts. qrs. lbs.	Cwts.
112640	120	2 13/16	133 3/4	186 15/32	481	1	18	}	330	2 13/16	stad	Hungley	Nelkerton 14.10.40 Ref.	TOWLINE	130	6 1/2	112 3/4	130	6 1/2	
112641	120	2 7/16	80	80	481-0-17				2 13/16	stad	80	80	14.10.40. 80.		HAWSERS & WARPS	20120	2 3/4	15 3/4	20120	2 3/4
	240																20120	2 3/4	15 3/4	20120
		Cir.							Cir.											
Iron-Stream Chain or Steel Wire	120	5 1/2		84 3/4					120	5 1/2	7/32 wire									
112642	Shackles for 1 9/16	stad	43 18/32	61 18/32	-	1-21					Hungley	Nelkerton 14.10.40 Ref.								

Steering Gear, Type (Power ~~or hand~~) Electric. Fixed tiller, loose quadrant H.W. type Alternative Means of Steering power unit in duplicate

Steering Chains (Size and Test) electric control Windlass Electric Boats 7 + motor boat

Ceiling in Holds, thickness and material clear insulation, none Cargo Battens, thickness, material and spacing none, clear insulation

Cargo Hatchways.-(Upper Deck) steel plate and sections Thickness of Hatches 2 1/2"

Size of Hatchways No. 1 (Fwd.) 18'x18' No. 2 28'4"x18' No. 3 22'5"x18' No. 4 19'10"x18' No. 5 22'8"x18' No. 6 17'x18'

Number of Shifting Beams and/or Fore and Afters 3 ; 5 ; 4 ; 3 ; 4 ; 3

Builder's Signature

For HARLAN & WOLFE LIMITED.

A. J. Man hull
Secretary

GENERAL DECLARATION. It should be stated (a) whether the vessel (if not a motorship) is fitted for the carriage and burning of oil used as fuel Motors kept.
(b) whether the vessel, not being an oil tanker, is fitted for carrying oil as cargo. No The positions in which oil is carried as fuel or cargo should be indicated, together with the flash point (where required to be inserted in the Notation).

Oil fuel is carried in deep oil fuel bunkers at forward end of machinery space, in deep tanks between and at side of shaft tunnels and in double bottom tanks Nos 4, 5, 6, 7 port/starboard.
F.P. above 150°F. This vessel has been built in accordance with the approved plans

the Secretary's letter and in conformity with the Rules for the class contemplated. The material and workmanship are good. The double bottom tanks, including cofferdams, oil fuel bunkers, forward & after peaks have been water tested to Rule requirements and found satisfactory. Weather decks, W.T. bulkheads, plate tunnels, cargo doors and meat port doors have been satisfactorily tested by hose. Steering gear windlass and anchors and helge sections have been tried under working conditions and found in order. Freeboard assigned, verified and cut in.

(As authorised the specification requirements were carried out on behalf of the D.M.S.R.)

The amount of Entry Fee £12 : 0 : 0 Fees applied for, 14. 4. 1942 (Special notations, where part of class, to be stated.)

Special Survey Fee £493 : 9 : 6 Received by me, 19

Freeboard
Travelling Expenses, if any £20 : 0 : 0
(Specification Req 123-7-0)

State whether the Vessel has been built under Special Survey Yes.

I am of opinion the Vessel should be Classed +100 A-1.

with freeboard
Wm Balfour.
Surveyor to Lloyd's Register of Shipping.

Certificate to be sent to Belfast office. Date of issue 27/5/42.

Committee's Minute FRI. 24 APR 1942

Character assigned +100 A-1.
With freeboard

Lloyd's arch. Amcl 4. 42 Subject
Oct. 650. 2 D.S. - 100 A-1

note for S.R.L.
Write GK

Oil Eng. Ch.

Lloyd's Register
Foundation

0046 2/2

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 N°1050 Empire Hope Rpt N°13091. Lond. 19.11.41
The vessel is insulated for the carriage of refrigerated cargoes except in No 6 hold and the upper tween decks abaft No 2 hold. The bridge space is arranged for passengers (non-paying). The vessel has no tonnage opening and the draught is 18 inches in excess of that corresponding to the freeboard which would be assigned with a tonnage opening and the scantlings arranged to suit.
In the upper tween decks seven divisional W.T bulkheads fitted. Forward in way of insulation the bulkheads are intact, at forward end of No 4 hold openings closed with hinged steel W.T door. Elsewhere openings closed with steel plates secured by close spaced through bolts, substantially water tight with notice painted on bulkhead that openings are to be always closed at sea.

Damage(a) due to enemy action while on the building berth. On starboard side at aft end and cruiser stern a number of shell plates, as follows, damaged by splinter due to a near miss by bomb.
Keel (1 plate) Strake B (1 plate) bottom plating (7 plates) strake H (3 plates) strake I (3 plates); strake J (4 plates) strake K (3 plates) strake L (2 plates) strake M (4 plates) strake N (3 plates).
The size of holes varied from 5" x 3" to 1/2" diameter. In all there were about 60 perforations and about 150 abrasions, scoring and indenting the plating very locally. Up to 1 1/2" diameter holes were drilled circular and welded; larger perforations were repaired by spigot patches fitted & welded to a small local inside backing plate. Scorings were welded and small local indents were filled in with welding on the outside without fairing the plate.

Damage(b) whilst vessel was moored alongside, fitting out. The Ss St Roman on 11.12.41 fouled the port side on counter. Frame 99 aft cropped at steering gear platform and about 5 ft removed and welded. Web plate on fr 99 below platform fanned in place. Shell plate K 21 on upper edge 5' x 3" cropped out and new plate inserted & welded.
Forwarded: Seven casting and/or forging certificates: 4 certificates for masts, derricks, pillars.

PARTICULARS OF ELECTRIC WELDING (if employed) Oil fuel bunkers are in all welded construction. Girders welded to deck; straight tank top at fore end and No 6 hold welded to shell, bulkhead stiffener and connections welded to deck; shell chocks and generally for W.T and gas tight connections and extensively for non strength details.

SPECIAL NOTATIONS:—Either as part of the vessel's class or for record in the Register Book. Cruiser stern; at eng; D.F. E.S.D.
Ref. Machy; 7 divisional W.T. B.H. in upper tween decks

Particulars of Drop Test of Cast Steel Anchors, viz.:— Weight, Surveyor's Initials, Number of Certificate, Date of Test.	1st Bower 67-2.16 me. pins J.D. (Simdulan) N° 3216 3/8/40
	2nd " 66-3.19 " " A.G.G. (A) N° 3197 23/8/40
	3rd " "

PARTICULARS FOR RECORD in the REGISTER BOOK.—Length of Poop 64.3 ft., R.Q.D. 1 ft., Bridge 195.5 ft., Forecastle 67.5 ft.
(in feet and tenths). When the Poop or Forecastle are joined to the B.D., this should be distinctly stated. ✓
Official No. 168508 Signal Letters Extreme Breadth ^{no belting.} 70' 4 1/2" Over-all Length 540' 1" ✓
(Circ. 1611) (Circ. 1703)
No. and Material of Decks 3 decks, 4th deck - N° 213 holds
Parts of Bottom of Vessel coated with cement or approved composition in N° 213 DB fresh water & peaks
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, N° 8	62.3	98	Fore peak tank,		109
Double bottom, under Engines and Boilers,			After peak tank,		178
Double bottom, if under Engines only, N° 617 - label	73.7	467	Deep tank, aft, Tanks at center side of		
Double bottom, if under Boilers only,			Deep tank, forward, Tunnel including		
Double bottom, forward, N° 1, 2, 3, 4, 5	230.1	937	Other tanks, if fitted, common double bottom		1611
Total length (if continuous) and Capacity		1502	(If necessary furnish further information by sketch.)		

Order for Special Survey No. 887	1939 Nov 14. 22. 24 Dec. 1. 6. 14. 18	1940 Jan 3. 5. 11. 17 Feb. 7. 13. 20. 27 Mar. 4. 15. 27 Apr. 2. 10. 12. 23
Date 10. 10. 39	29 May 8. 14. 21. 27 June 7. 11. 14. 25 July 2. 10. 19. 24. 27 Aug. 2. 8. 14. 20. 28 Sept. 26 Oct. 4. 7. 8. 14. 24	Nov. 4. 25. 28 Dec. 2. 5. 11. 16. 18. 21
Dates of Surveys held while building	14. 19. 20. 21. 25. 27. 28. 31 Apr. 3. 4. 10. 11. 21. 23. 24. 25. 30 May 1. 2. 26. 27 June 24. 10. 12. 23. 24	Jan 3. 10. 13. 16. 22 Feb. 10. 11. 14. 17. 19. 20. 24. 25. 26 Mar. 7. 6. 11
	July 4. 18. 19. 21. 28. 29. 30. Aug. 2. 4. 5. 7. 9. 11. 12. 13. 15. 19. 20. 21. 23. 25 Sept. 4. 16. 18. 29. 30	Oct. 1. 2. 6. 8. 10. 13. 14. 22. 23. 28. 28 Nov. 3. 6. 13. 25. 26. 28 Dec. 2. 3. 5. 8. 11. 18. 19. 22 1941 Jan. 2. 6. 24
	Feb. 2. 10. 11. 12. 16. 18. 19. 20. 23. 24. Mar. 2. 9. 10. 12. 13. 16. 17. 18. 19. 20. 21. 22	23. 24. 25. 26. 27. 28. 30. 31 April 1
		Total No. of Visits 188