

Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 64727

Received at London Office - 4 DEC 1941

Date of writing Report 19 When handed in at Local Office 29: 11: 1941 Port of Glasgow  
No. in Survey held at Glasgow Date, First Survey 19: 6: 40 Last Survey 3: 11: 1941  
Reg. Book. Number of Visits 4

Single on the Twin Triple Quadruple Screw vessel "EMPIRE GRACE."  
Built at Belfast By whom built Harland & Wolff, Ltd. Yard No. 1051 When built  
Owners Port belonging to  
Oil Engines made at Glasgow By whom made Harland & Wolff, Ltd. Contract No. 1051 When made 1941  
Generators made at Belfast By whom made Harland & Wolff, Ltd. Contract No. When made  
No. of Sets 4 Engine Brake Horse Power 480 Nom. Horse Power as per Rule 548 Total Capacity of Generators 1320 Kilowatts.

OIL ENGINES, &c.—Type of Engines Heavy oil, Airless injection 2 or 4 stroke cycle 4 Single or double acting S.A.  
Maximum pressure in cylinders 700 lb. Diameter of cylinders 330 mm. Length of stroke 580 mm No. of cylinders 6 No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 400 mm Is there a bearing between each crank yes  
Revolutions per minute 300 Flywheel dia. 1090 mm. Weight 4 tons Means of ignition Compression Kind of fuel used Diesel oil  
Crank Shaft, dia. of journals as per Rule 280 mm as fitted 280 mm Crank pin dia. 220 mm Crank Webs Mid. length breadth 292 mm Thickness parallel to axis  
Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thickness of cylinder liners 24 to 20 mm.  
Is a governor or other arrangement fitted to prevent racing of the engine when disengaged yes Means of lubrication forced.  
Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged.  
Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel  
Lubricating Oil Pumps, No. and size One each engine at 7.2 tons per hour.  
Air Compressors, No. No. of stages Diameters Stroke Driven by  
Scavenging Air Pumps, No. Diameter Driven by

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule  
Can the internal surfaces of the receivers be examined What means are provided for cleaning their inner surfaces  
Is there a drain arrangement fitted at the lowest part of each receiver  
High Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness  
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules  
Starting Air Receivers, No. Total cubic capacity Internal diameter thickness  
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules

ELECTRIC GENERATORS:—Type To be fitted at Belfast.  
Pressure of supply 222 volts. Load 1490 Amperes. Direct or Alternating Current D.C.  
If alternating current system, state frequency of periods per second  
Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes  
Generators, do they comply with the requirements regarding rating yes are they compound wound yes  
are they over compounded 5 per cent. yes, if not compound wound state distance between each generator.  
is an adjustable regulating resistance fitted in series with each shunt field yes Are all terminals accessible, clearly marked, and furnished with sockets yes  
are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes Are the lubricating arrangements of the generators as per Rule yes  
PLANS. Are approved plans forwarded herewith for Shafting yes Receivers Separate Tanks

SPARE GEAR As per attached list.

The foregoing is a correct description,  
For HARLAND AND WOLFE LIMITED.

Wm. J. Wright, Manufacturer.

Finnlaction Secretary



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003816-003823-0055

Dates of Survey while building  
 During progress of work in shops - - -  
 During erection on board vessel - - -  
 Total No. of visits

1940 June: 19 Aug: 5.7.30 Sep: 2.4.20 Oct: 18 Dec: 9.10.12.17.27 (1941) Jan: 7.13.14.24 Feb: 5.17  
 Mar: 18.24.25.26.28 Apr: 8.22 June: 13.19.27 July: 10.11.14.18.30 Aug: 12.28.29 Sep: 1 Oct: 2  
 14.15.16 Nov: 3

Dates of Examination of principal parts—Cylinders  
 8-6-41  
 13-6-41  
 28-8-41  
 15-10-41

Covers  
 10-12-40  
 28-3-41  
 1-9-41  
 16-10-41

Pistons  
 8-6-41  
 13-6-41  
 28-8-41  
 15-10-41

Piston rods ✓

Connecting rods  
 7-1-41 ; 22-5-41 Intermediate shaft ✓

Crank and Flywheel shaft  
 S-1160 P.9.  
 471 P.9.  
 S-1635 P.9.  
 529 P.9.

Crank and Flywheel shaft, Material Steel Identification Mark Intermediate shafts, Material ✓ Identification Marks ✓

Is this machinery duplicate of a previous case? *Yes.* If so, state name of vessel *Empire Hope. Glasgow Rpt No. 63570*

General Remarks (State quality of workmanship, opinions as to class, &c.)

This auxiliary machinery has been built under Special Survey and in accordance with the approved plans and the Rules of this Society.  
 The materials and workmanship are good.  
 On completion the machinery has been tested under full load on the Works test bed with satisfactory results. It has now been despatched to Belfast to be installed on board the vessel.

Ed  
 29/11/41

These auxiliary engines have now been efficiently fitted on board the vessel and tried under full working conditions with satisfactory results.

*J. Shaw*  
 13/1/42

*Noted.*

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Fee ... £ 54 : 16 :  
 Travelling Expenses (if any) £ : :  
 When applied for, 2 DEC 1941  
 When received, 19

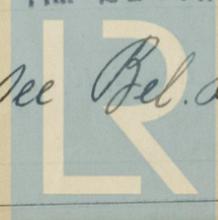
*P. Fitzgerald*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 2 DEC 1941

Assigned *Deferred*

*See Bel. No. 13212*

FRI. 24 APR 1942



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