

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 11655

Date of writing Report 31.12.35 Port of Belfast  
 Received at London Office JAN 1936  
 When handed in at Local Office Belfast  
 Date, First Survey Please see 7.2. mch.  
 Last Survey 19  
 No. in Survey held at Reg. Book. 37964 on the Single Twin Triple Quadruple Screw vessel EMPIRE STAR  
 Number of Visits 19

Built at Belfast By whom built Harland + Wolff Ltd. Yard No. 957 When built 1935  
 Owners Blue Star Line Ltd. Port belonging to Belfast  
 Oil Engines made at Belfast By whom made Harland + Wolff Ltd. Contract No. 957 When made 1935  
 Generators made at Winton By whom made General Electric Co. Ltd. Contract No. B.82993 B.82995 B.82992 When made 1935  
 No. of Sets 3 Engine Brake Horse Power 1485 Nom. Horse Power as per Rule 424 Total Capacity of Generators 990 Kilowatts.

OIL ENGINES, &c. Type of Engines Harland + Wolff B.W. Oilless Injected 2 or 4 stroke cycle 4 Single or double acting single  
 Maximum pressure in cylinders 500 lbs. 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. 1900 mm. Weight 4000 lbs. Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 199.7 mm as fitted 230 mm Crank pin dia. 220 mm Crank Webs Mid. length breadth 301 mm Thickness parallel to axis solid forged  
 Flywheel Shaft, diameter as per Rule 199.7 mm as fitted 270 mm Intermediate Shafts, diameter as per Rule as fitted Thickness of cylinder liners 24 mm

Is a governor or other arrangement fitted to prevent racing of the engine when declutched 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 Three 8 1/2 cub. inches/hr. at 300 rpm.  
 Air Compressors, No. No. of stages Diameters Stroke Driven by  
 Scavenging Air Pumps, No. Diameter Stroke Driven by

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes  
 Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces open ends  
 Is there a drain arrangement fitted at the lowest part of each receiver yes  
 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. Three Total cubic capacity 180 litres each Internal diameter 14" thickness 1/2"  
 Seamless, lap welded or riveted longitudinal joint yes Material Steel Range of tensile strength 28/32 Working pressure by Rules 970 lbs.

ELECTRIC GENERATORS:—Type Compound  
 Pressure of supply 220 volts. Load 4500 total Amperes. Direct or Alternating Current Direct  
 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 22-2-35 Receivers Separate Tanks  
 SPARE GEAR in accordance with the rules - See separate schedule

The foregoing is a correct description.  
 For HARLAND AND WOLFF, LIMITED  
 A. G. Marshall Manufacturer.  
 Assistant Secretary



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 Foundation



Dates of Survey while building:
 

- During progress of work in shops - -
- During erection on board vessel - - -
- Total No. of visits

Dates of Examination of principal parts—Cylinders 6.9.35 46.11.35      Covers 6.9. 18.11.35      Pistons 6.9. 11.11.35      Piston rods

Connecting rods 2.9.35 + 27. 11. 35      Crank and Flywheel shaft 8.7. 35 + 5. 8. 35      Intermediate shaft

Crank and Flywheel shafts, Material *S. M. Steel*      Identification Mark *220402 5496*

Intermediate shafts, Material *✓*      Identification Marks *✓*

Is this machinery duplicate of a previous case *Yes*      If so, state name of vessel *Australia Star*

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

These engines have been constructed under special survey. The materials & workmanship are good. The engines have been satisfactorily tested with the generators. The engines have been efficiently installed & fastened on seats in the main motor room of the vessel and tried under working conditions. The vessel is eligible, in my opinion, for classification in the Lloyd's Register Book.

The amount of Fee ... £      Travelling Expenses (if any) £      When applied for, 19...      When received, 19...

Committee's Minute *FRI. 10 JAN 1936*  
*Assigned* *See 76. Rel 11655*