

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 13100

Rept. 4c.

Date of writing Report **8th December, 1947** When handed in at Local Office **12th December, 1947** Received at London Office **23 DEC 1947**  
 Port of **MANCHESTER.**  
 Date, First Survey **1st October, 1947** Last Survey **5th December, 1947**  
 Number of Visits **3**

Survey held at **MANCHESTER.**  
 Single ☒ Twin ☐ Triple ☐ Quadruple ☐ Screw vessel ☒  
 Built at **Ardrossan.** By whom built **Ardrossan Dockyard Co. Ltd.** Yard No. **404** When built **1947.**

Engines made at **Patricroft.** By whom made **L. Gardner & Sons Ltd.** Engine No. **73119** When made **1947.**  
 Generators made at **Liverpool.** By whom made **Campbell & Isherwood Ltd.** Generator No. **36755** When made **1947.**  
 No. of Sets **1.** Engine Brake Horse Power **99** M.N. as per Rule **24.75** Total Capacity of Generators **64** Kilowatts.

Is Set intended for essential services ☒  
**OIL ENGINES.** &c.—Type of Engines **Vertical Airless Injection Heavy Oil,** 2 or 4 stroke cycle **4.** Single or double acting **Single.**  
 Maximum pressure in cylinders **850 lbs per sq. inch.** Diameter of cylinders **5.1/2"** Length of stroke **7.3/4"** No. of cylinders **6.** No. of cranks **6.**  
 Minimum pressure **120 lbs per sq. inch.** Firing order in cylinders **153624** Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **6.15/16"**

Is there a timing gear between each crank **Yes.** Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) **1027 lbs/ft<sup>2</sup>** Revolutions per minute **800.**  
 Flywheel dia. **32"** Weight **853 lbs.** Means of ignition **Compression** Kind of fuel used **Diesel Oil.**  
 Crank Shaft, dia. of journals **4.1/8"** as per Rule **Approved.** Crank pin dia. **3.5/8"** Crank Webs Mid. length breadth **5.1/2"** Thickness parallel to axis **1.11/16"**  
 as fitted **4.1/8"** as per Rule **Intermediate Shafts:** diameter **292 lb/ft<sup>2</sup>** as fitted **292 lb/ft<sup>2</sup>** General armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) **292 lb/ft<sup>2</sup>**

Are means provided to prevent racing of the engine when declutched **Yes.** Means of lubrication **Forced.** Kind of damper if fitted **Spring loaded friction type.**  
 Are the cylinders fitted with safety valves **No.** Are the exhaust pipes and silencers water cooled or lagged with non-conducting material **Watercooled Exhaust Manifold.**  
 Cooling Water Pumps, No. **Ram Type.** Is the sea suction provided with an efficient strainer which can be cleared within the vessel ☒

Lubricating Oil Pumps, No. and size **One Integral with Engine.**  
 Air Compressors, No. **No. of stages** **Diameters** **Stroke** **Driven by**  
 Scavenging Air Pumps, No. **Diameter** **Stroke** **Driven by**

**AIR RECEIVERS:**—Have they been made under Survey ☒ State No. of Report or Certificate **11.48**  
 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**

**Low Pressure 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 **Compound Wound Continuous Rating.**

Pressure of supply **220.** volts. Full Load Current **290.** Amperes. Direct or Alternating Current **Direct Current.**  
 If alternating current system, state the periodicity **—** Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown on and off **Yes.** Generators, are they compounded as per Rule **Yes.** 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.**  
 Are the generators under 100 kw. full load rating, have the makers supplied certificates of test **Yes.** and do the results comply with the requirements **Yes.**  
 Are the generators 100 kw. or over have they been built and tested under survey ☒

Details of driven machinery other than generator **—**  
**PLANS.**—Are approved plans forwarded herewith for Shafting **Approved 30.4.46.** Receivers **—** Separate Tanks **—**  
 Have Torsional Vibration characteristics if applicable been approved **—** (state date of approval) Armature shaft Drawing No. **—**

**SPARE GEAR AS PER RULE REQUIREMENTS.**

The foregoing is a correct description,  
 For and on behalf of **L. GARDNER & SONS LTD.** **Manufacturer.**



1943. July 5.  
 1947. Oct. 1, 2. Dec. 5.  
 Dates of Survey work in shops  
 Dates of Examination of parts  
 1.10.47. 1 & 2.10.47. 1.10.47.  
 1.10.47. 5.7.46.  
 0.H. Steel. 36.0 Tons per sq. inch.  
 32%  
 Lloyd's W. 1389, 5.7.46. A.T.R.  
 J. Gardner & Sons Ltd.  
 Campbell & Jephcott Ltd.  
 Identification marks on Air Receivers

Is the machinery supplied with oil? No.  
 This engine has been constructed under special survey of tested materials in accordance with the Secretary's letters, approved plans and Requirements of the Rules. Materials and workmanship are good and the engine when tested in the shop under full load conditions, gave satisfactory results. The engine in our opinion, is suitable for fitting on board a vessel to be classed with this Society.

Particulars of the crankshaft will be found in Manchester Certificate No. C 5159, dated 9.8.46.  
 Forged. Yes.  
 Watercooled Exhaust Manifold. No.

Compound Working Continuous Rating. 250.  
 Direct Current.  
 Yes.  
 Yes.  
 Yes.  
 Approved 30.4.46.  
 AS PER RULE REQUIREMENTS.

The amount of Fee ... 4 19 0.  
 Travelling Expenses (if any) ...  
 When received ...  
 Glasgow 29 JUN 1948  
 Committee's Minute  
 Assigned  
 R. Morton for R. M. Lellan & Sec  
 Surveyor to Lloyd's Register of Shipping.

101,846-T. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minutes)

