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REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

34863

No. 13158

Date of writing Report **27th January, 48** When handed in at Local Office **5th February, 48** Port of **MANCHESTER** Received at London Office **7 FEB 1948**

No. in Survey held at **MANCHESTER** Date, First Survey **20th August, 1946** Last Survey **16th January, 1948**

Reg. Book. **Single** on the **Twin** Triple **Quadruple** Screw vessel. **CLASSED VESSEL** **M/V "FERNLAND"** Number of Visits **14**

J.G. Kincaid Engine No. X.193 F. Tons **5564** Gross **3140** Net

Built at **SUNDERLAND** By whom built **Bartram's** Yard No. **325** When built **1948**

Owners **FEARNLEY & EGGER** Port belonging to **OSLO**

Oil Engines made at **Stockport** By whom made **Mirrlees, Bickerton & Day Ltd.** Engine No. **21222** When made **1947**

Generators made at **Trafford Park** By whom made **Metro-Vickers for B.T.H.** Generator No. **474521/1/02** When made **1947**

No. of Sets **1** Engine Brake Horse Power **262** M.N. as per Rule **65.5** Total Capacity of Generators **150** 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 **800** lbs per sq. inch. Diameter of cylinders **8 1/2"** Length of stroke **13 3/4"** No. of cylinders **5** No. of cranks **5**

Is there a bearing between each crank **Yes** Moment of inertia of flywheel **644,000** LBS/IN² Revolutions per minute **600**

Flywheel dia. **4 ft. 0 ins.** Weight **1690 lbs.** Means of ignition **Compression** Kind of fuel used **Diesel Oil**

Crank Shaft, dia. of journals **5 3/4"** as per Rule **Approved** Crank pin dia. **5 9/16"** Crank Webs **2 15/32"** Mid. length breadth **8 1/2"** Thickness parallel to axis **-**

Flywheel Shaft, diameter **-** as per Rule **-** Intermediate Shafts, diameter **-** as fitted **-** General armature, moment of inertia **84,000** LBS/IN²

Are means provided to prevent racing of the engine when declutched **Yes** Means of lubrication **Forced** Kind of damper if fitted **None**

Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled or lagged with non-conducting material **Yes**

Cooling Water Pumps, No. **One Centrifugal V Belt Driven** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**

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 **Yes** State No. of Report or Certificate **-**

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 **-**

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. **-** 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 **683** Amperes. Direct or Alternating Current **Direct Current**

Is alternating current system, state the periodicity **Yes** 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 **Yes**

Are the generators 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 **Yes**

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 **Approved 20.12.46** Armature shaft Drawing No. **B.3024793**

SHAFTING:—Are approved plans forwarded herewith for Shafting **Approved 30.4.46**

HAZEL GROVE, Mr. STOCKPORT

The foregoing is a correct description, and the particulars of the installation as fitted are as approved for Torsional Vibration Characteristics.

Manufacturer **Chief Draftsman**

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Dates of Survey while building
During progress of work in shops - 1947. Aug. 26. Sept. 5, 9, 10, 17, 19, 24. Oct. 9, 14, 29. Nov. 4, 17. 1948. 15, 16.
During erection on board vessel -
Total No. of visits

Dates of Examination of principal parts
Cylinders 10.9.47. 17.9.47. Covers 17.9.47. 19.9.47. Pistons 16.1.48. Piston rods -

Connecting rods 9.9.47. Crank ~~shafts~~ shafts 24.9.47. Intermediate shafts -

Material G.H. Steel. Tensile strength 45.2 Tons per sq. inch.

Crank shaft Elongation 27% Identification Marks LLOYD'S 1464 5.9.47. R.J.Y.

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers

Oil Cooler No. 75341. LLOYD'S 100 lbs. 9.10.47. R.M.L.

Is this machinery duplicate of a previous case No. If so, state name of vessel

GENERAL REMARKS (State quality of workmanship, opinions as to class, etc.) This engine has been constructed under special survey of tested materials in accordance with the Secretary's letters, approved plans and Requirement of the Rules. Materials and workmanship are good, and the engine when tested in the shop under full load conditions, showed satisfactory results.

The torsional vibration characteristics were approved on the 20th December, 1946, for a service speed of 600 R.P.M. In our opinion, this engine is suitable for installation on board a vessel to be classed with this Society, for the purpose intended.

Attached herewith:- Report 6 No. F.5003.

Generator Certificate has been forwarded direct to Sunderland.

201,847.-T. (MADE AND PRINTED IN ENGLAND)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Fee ... £ 13 : 2 : 0. When applied for 5/2/48

Travelling Expenses (if any) £ 1 : 19 : 8. When received 19

Committee's Minute

Assigned See F.E. mch. rpt.

FRI. 23 APR 1948

R. J. Y. Oulton
Surveyor to Lloyd's Register of Shipping.

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