

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 13165.

Date of writing Report 2nd February, 48. When handed in at Local Office 10th February, 48. Received at London Office 11 FEB 1948. Port of MANCHESTER.

No. in Reg. Book. Survey held at MANCHESTER. Date, First Survey 1st August, 1947. Last Survey 22nd January, 1948. Number of Visits 18.

on the Single Triple Quadruple Screw vessel. CLASSED VESSEL. M/V FERNLAND. Tons Gross 5564 Net 3140.

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

Owners FRANKLY & EGER. Port belonging to Oslo.

Oil Engines made at Stockport. By whom made Mirreless, Bickerton & Day Ltd. Engine No. 21223. When made 1947.

Generators made at Trafford Park. By whom made Metro-Vickers for B.T.H. Co. Generator 474521/1/03. 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.

Set intended for essential services.

OIL ENGINES, &c.—Type of Engines Vertical Airless Injection, Heavy Oil, 4 stroke cycle. Single or double acting Single.

Maximum pressure in cylinders 800. Diameter of cylinders 8 1/2". Length of stroke 13 3/4". No. of cylinders 5. No. of cranks 5.

Lean indicated 100 lbs per sq. inch. Firing order in cylinders 1, 3, 5, 4, 2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 8 5/8".

Is there a bearing between each crank Yes. Moment of inertia of flywheel 644,000. 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 as per Rule Approved. 5 3/4". Crank pin dia. 5 9/16". Crank Webs Mid. length breadth 8 1/2". Thickness parallel to axis.

Flywheel Shaft, diameter as per Rule. Intermediate Shafts, diameter as per Rule. General armature, moment of inertia 84,000.

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.

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.

Lubricating Oil Pumps, No. and size One integral with Engine.

Air Compressors, No. No. of stages. Diameters. Stroke. Driven by.

Receiving Air Pumps, No. Diameter. Stroke. Driven by.

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

Is each receiver, which can be isolated, fitted with a safety valve as per Rule.

Are the internal surfaces of the receivers 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 Compound Wound Continuous Rating.

Pressure of supply 220 volts. Full Load Current 683. Amperes. Direct or Alternating Current Direct Current.

Is an 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.

Is it provided that they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule Yes.

Do the generators under 100 kw. full load rating, have the makers supplied certificates of test. and do the results comply with the requirements.

Do the generators are 100 kw. or over have they been built and tested under survey Yes.

Details of driven machinery other than generator.

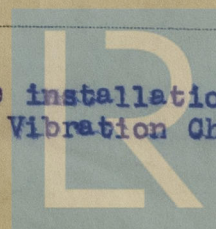
SHAFTS: Are approved plans forwarded herewith for Shafting Approved 30.4.46. Receivers. Separate Tanks.

Have Torsional Vibration characteristics if applicable been approved Approved 20.12.46. Armature shaft Drawing No. B.3024793.

SHAFT GEAR AS PER RULE REQUIREMENTS.

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

Manufacturer.



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Dates of Survey while building During progress of work in shops - - - 1947. Aug. 1, 26. Sept. 9, 10, 17, 19. Oct. 9, 20, 21, 30. Nov. 7, 12, 13, 17. 1948. Jan. 21, 22.
During erection on board vessel - - -
Total No. of visits 9 & 20.10.47.

Dates of Examination of principal parts Cylinders 17.9.47. Covers 9 & 21.10.47 Pistons 22.1.48. Piston rods -

Connecting rods 1.8.47. Crank shafts 20.10.47. Intermediate shafts -

Crank shaft Material O.H. Steel. Tensile strength 40.0 Tons per sq. inch.
Elongation 28%. Identification Marks Lloyd's 4722, 20.10.47. RTY.

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers

Oil Cooler No. 75378, Lloyd's 100 lbs. 9.10.47. RMCB.

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 Requirements 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.5013.

Generator Certificate forwarded direct to Sunderland.

The amount of Fee ... £ 13 : 2 : 0

When applied for 10.2.1948

Travelling Expenses (if any) £ 2 : 6 : 8.

When received 10

FRI. 23 APR 1948

Committee's Minute

Assigned

See F.E. mch. rpt.

Surveyor to Lloyd's Register of Shipping



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