

APR 1950

Rpt 4c
D.O.

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14103

Date of writing Report 10th March, 1950. When handed in at Local Office 19 Port of MANCHESTER. Received at London Office 6 JUN 1950

No. in Survey held at HAZELGROVE, STOCKPORT. Date, First Survey 29th December, 1949. Last Survey 10th March, 1950.

Reg. Book. Single on the Twin Triple Quadruple Screw vessel. Classed Vessel. Number of Visits 15.

Built at Wallsend-on-Tyne. By whom built Swan, Hunter & Wigham Richardson. Yard No. 1876. When built.

Owners. British Tanker Co. Port belonging to London. Engine No. 32371-2. When made 1950.

Oil Engines made at Hazel-Grove. By whom made Mirrlees, Bickerton & Day Ltd. Contract No. 3237. Generator No. 41485.

Generators made at Sunderland. By whom made Sunderland Forge & Eng. Co. Contract No. 41486. When made.

No. of Sets Two. Engine Brake Horse Power 135 x 2 M.N. as per Rule 34 x 2. Total Capacity of Generators 75 x 2. Kilowatts. Total = 270. Total = 68. Total = 150.

Is Set intended for essential services. Yes.

OIL ENGINES, &c.—Type of Engines Mirrlees TL.3 Type Heavy Oil. 2 or 4 stroke cycle 4. Single or double acting Single.

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

Mean indicated pressure 115 lbs/sq. inch. Firing order in cylinders 1, 3, 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 3,500 lbs ins² sec². Revolutions per minute 500.

Flywheel dia 4' -6". Weight 2800 lbs. Means of ignition Compression. Kind of fuel used Diesel.

Crank Shaft, dia. of journals as per Rule. As approved. 5 3/4". Crank pin dia. 5.9/16". Crank Webs Mid. length breadth 9 1/4". Thickness parallel to axis.

Flywheel Shaft, dia. of journals as per Rule. As approved. 2 15/32". Mid. length thickness. Thickness round eye hole.

Fitted to the end of the Crankshaft Intermediate Shafts, diameter as per Rule. 249 lbs ins² sec². General armature, moment of inertia (1800 x 1000).

Are means provided to prevent racing of the engine when declutched. Yes. Means of lubrication Forced. Kind of damper if fitted.

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. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.

Lubricating Oil Pumps, No. and size One per Engine - Gear Type Engine driven: Capacity 666 G.P.H.

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 C.11620 & 11619.

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. Cleaning Doors.

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. One per Engine Total cubic capacity 5 x 2 = 10 cu. ft. Internal diameter 1' -6". thickness 5/16".

Circumferentially welded Seamless, lap welded or riveted longitudinal joint. Material M. S. Range of tensile strength 26/30. Working pressure by Rules 395.

ELECTRIC GENERATORS:—Type Open Type, Ventilated, Drip-proof, Compound wound.

Pressure of supply 110. volts. Full Load Current 682. Amperes. Direct or Alternating Current Direct.

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.

If the generators are under 100 kw. full load rating, have the makers supplied certificates of test. Built and tested under survey. and do the results comply with the requirements.

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

Generator Identification marks: LLOYD'S TEST

Details of drive machinery other than generator 19.2.50 R.M.H.

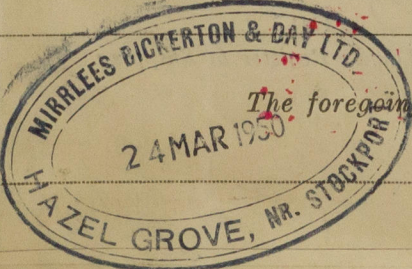
PLANS.—Are approved plans forwarded herewith for Shafting 2.7.48 Approved Standard Type

(If not, state date of approval) Receivers Dg. No. DL 31258/1. Separate Tanks.

Have Torsional Vibration characteristics if applicable been approved. Yes, for 500 R.P.M. 22.10.49. Armature shaft Drawing No. 43938

(state date of approval) Noted - 22.10.48.

SPARE 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.

CHIEF DRAUGHTSMAN.



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Foundation
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Dates of Survey while building { During progress of work in shops - - 1949. Dec. 29. 1950. Jan. 9,10,12,13,19,20,23,26. Feb. 20,22. March 1,3,9,10.
During erection on board vessel - - -
Total No. of visits - - -

Dates of Examination of principal parts - Cylinders 29.12.49. Covers 20,23/1/50. 20,22/2/50. Pistons 9,10/3/50. Piston rods -
Liners 9,10/1/50. 19.1.50.
Connecting rods 26.1.50. Crank and Flywheel shafts 14.2.50. Intermediate shafts -

Crank shaft { Material S.M. Steel. Tensile strength 49.2 Tons/sq.inch.
Elongation 28% on 2", 29% on 2". Identification Marks Lloyd's 6655 G.M. 14.2.50 W.J.I.
Lloyd's 908 19.1.50. W.J.I.

Flywheel shaft, Material - Identification Marks -
J.& H. McLaren No. 8226. Lloyd's Test. T.P.700 lbs, W.P. 350 lbs. 17.2.50.
Identification marks on Air Receivers R.McL. M.B.& D. 4682. 13.3.50. W.J.I.
J.& H. McLaren No. 8227. Lloyd's Test. T.P.700 lbs. W.P. 350 lbs. 17.2.50.
R.McL.M.B.& D. 4683. 13.3.50. W.J.I.

Is this machinery duplicate of a previous case - If so, state name of vessel -
GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Diesel Generator Sets have been constructed under Special Survey of tested materials and in accordance with the Secretary's letters, approved plans and Rule requirements.

The material, so far as could be seen, appeared sound and free from defects. The workmanship is good.

Each engine, direct coupled to its respective Electric Generator was tested at the Engine Builders Works under the following conditions of loading, and found satisfactory:
6 Hours 100% Load and 1 Hour 110% Load.

Torsional vibration characteristics of the shafting installation of this auxiliary machinery have been examined and approved for a service speed of 500 R.P.M.

In the opinion of the undersigned these Diesel Generator Sets are suitable for installation in a vessel classed with the Society, for the purpose intended.

Attached hereto copy of Sheffield forging Report No. 51153, Mch. Forging Rpt. No. F.6159, Air Receiver Certs. Nos. C.11619 & 11620

SURVEY OF MACHINERY.
NEWCASTLE-ON-TYNE

These Generator Sets have been efficiently installed & fixed in the M.V. BRITISH UNION, examined under working conditions & found satisfactory.

J. H. Matthews

SURVEYOR TO LLOYD'S REGISTER.
NEWCASTLE-ON-TYNE.

The amount of Fee ... £ 13 : 12 : 0 { When applied for 22.4.50 1950
Travelling Expenses (if any) £ 3 : 0 : 0. { When received 19

Committee's Minute FRI, 30 JUN 1950
Assigned See F.E. mch. rpt.

