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Rpt to 10 Nov 1950

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14275.

IN D.O.

Date of writing Report 16/8/1950. When handed in at Local Office 31st August, 1950. Received at London Office 19 NOV 1950. Port of Manchester.

No. in Reg. Book. Survey held at Hazel Grove, Stockport. Date, First Survey 20/1/50. Last Survey 17/7/1950. Number of Visits 12.

Single on the Twin Triple Quadruple } Screw vessel **T.E.S. 'SAN SALVADOR'** Classed Vessel.

Gross 10802
Net 6035

Built at Haverton-on-Tees. By whom built Furness Shipbuilding Co. Ltd., Yard No. 445. When built.

Owners. Port belonging to.

Oil Engines made at Hazel Grove. By whom made Mirrlees, Bickerton & Day Ltd. Engine No. 3523/1. Contract No. 3523. When made 1950.

Generators made at. By whom made General Electric Company Ltd. Gen. No. W/057907/1. When made 1950.

No. of Sets One. Engine Brake Horse Power 262. M.N. as per Rule 65.5. Total Capacity of Generators 150. Kilowatts.

Is Set intended for essential services Yes. 12 Hr. rating.

OIL ENGINES, &c.—Type of Engines Mirrlees T.L.5 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 8.5" Length of stroke 13.75" No. of cylinders 5 No. of cranks 5

Mean indicated pressure 112 lbs./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 1/2"

Is there a bearing between each crank Yes. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 1670 lbs.in.sec² Revolutions per minute 600

Flywheel dia. 4' - 0" Weight 1690 lbs. Means of ignition Compression. Kind of fuel used Diesel.

Crank Shaft, dia. of journals as per Rule. Crank pin dia. 5.9/16" Crank Webs Mid. length breadth 9 1/2" Thickness parallel to axis -

Flywheel Shaft, diameter as per Rule. Intermediate Shafts, diameter as per Rule. General armature, moment of inertia (16 m² or Kg.-cm.²) 447.2 lbs.in.sec²

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

Lubricating Oil Pumps, No. and size One Engine Driven Gear Type Capacity = 800 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.12979.

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. Total cubic capacity 5 Cubic Feet. Internal diameter 17 1/2" thickness 3/8"

Seamless, lap welded or riveted longitudinal joint. Material. Conforms to Class 2 Requirements 350 lbs

ELECTRIC GENERATORS:—Type Ventilated: Open Type: Drip Proof: for Welded Pressure Vessels. Compound Wound.

Pressure of supply 220 volts. Full Load Current 682. Amperes. Direct or Alternating Current Direct.

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

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. and do the results comply with the requirements.

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

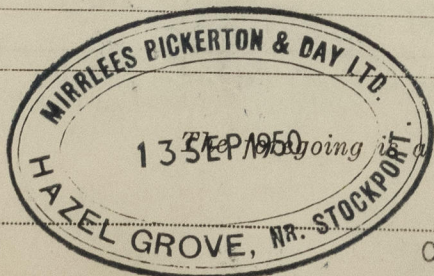
GENERATOR IDENTIFICATION MARKS: N.H.D. 57907/1 7/6/50.

PLANS.—Are approved plans forwarded herewith for Shafting 22/10/49. Drg. No. Approved Standard Type.

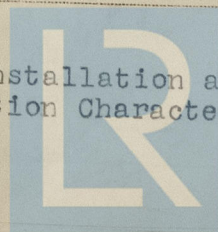
Have Torsional Vibration characteristics if applicable been approved Yes. 22/10/49. for 600 R.P.M. Separate Tanks.

SHAFTING.—Armature shaft Drawing No. M.17554. Noted: 22/10/49.

SHAFTING GEAR. AS PER RULE REQUIREMENTS.



CHIEF DRAUGHTSMAN
Manufacturer.



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005321-005324-0042

1950. Jan: 20-27. Feb: 17. March: 14-15-17-28-30. April: 3-13. July: 17-17.

Jan: 20. March: 14.-
Cylinder 15. April 3. Covers 3/5/50. Pistons 17/7/50. Piston rods.

Connecting rods 23/5/50. Crank ~~shaft~~ shafts 13/4/50. Cylinder Casings. Jan. 27; Feb. 1

Material S.M. Steel. Tensile strength 43.6 tons/sq.in.

Elongation 27% on 2". Identification Marks Lloyd's 6751 G.M.K. 13/4/50.

Sanck Lub. Oil Cooler: Lloyd's Test 28/3/50. Exhaust Manifold: Lloyd's Test

W.J.I.

J. & H. McLaren No. 8663: Lloyd's Test: T.P. 700 lbs: W.P. 350 lbs.

15/6/50. R. McL.

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.) This Diesel Generator set has been constructed under Special Survey of tested materials and in accordance with the Secretary's letters, approved and Rule Requirements. The material as could be seen appears sound and free from defects. The workmanship is good. The Engine direct coupled to its Electric Generator was tested at the Engine Builder's Works and found satisfactory under the following conditions of loading, 6 Hours at 100%, 1 Hour at 125%. Torsional vibration characteristics of the shafting installation of this auxiliary machinery have been examined in conjunction with the Engine Builder's Calculations and approved for service speed of 600 R.P.M. In the opinion of the undersigned this Diesel Generator set is suitable for installation, for the purpose required, in a vessel classed with the Society.

Attached hereto Forging Report F.6206 & Air Receiver Cert. C.12979. Generator certificate will be forwarded later.

This engine & generator have been thoroughly fitted aboard & tried out under working conditions & found satisfactory.

G. Herman Stuart.

The amount of Fee ... £ 13 : 2 : 0. When applied for 31/8/1950 (R.H.)

Travelling Expenses (if any) £ 3 : 0 : 0. When received 19

FRI. 9 FEB 1951

Committee's Minute

Assigned See F.E. mch. rpt.

W. J. Isaac
Surveyor to Lloyd's Register of Shipping.

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