

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 15406

2nd February, 1953. 10th March, 1953.

Received at London Office

Date of writing Report 19... When handed in at Local Office 19... Port of MANCHESTER.

No. in Survey held at Ashton-under-Lyne. Date, First Survey 7th July, 1952. Last Survey 30th January, 1953. M.V. SILVERBROOK. Number of Visits 4.

Single on the Twin Triple Quadruple Screw vessel. Classified Vessel. Tons Gross... Net...

By whom built Smith's Dock. Yard No. EW.1225. When built... Ordered by The Sunderland Forge & Engineering Co. Ltd., O/N.25/646/7/8. Port belonging to...

Engines made at Ashton-u-Lyne. By whom made National Gas & O.E. Co. Ltd. Engine No. 90187. When made 1952/3.

Generators made at Sunderland. By whom made Sunderland Forge & Eng. Co. Generator No. 45242. When made 1953.

No. of Sets 1. B.H.P. of each Set 82. M.N. as per Rule 20. Capacity of each Generator 35 Kilowatts.

Set intended for essential services Auxiliary Machinery.

OIL ENGINES, &c.—Type of Engines "M43" type National. 2 or 4 stroke cycle 4. Single or double acting Single.

Maximum pressure in cylinders 95.0 lbs/sq. Diameter of cylinders 6". Length of stroke 8 1/2". No. of cylinders 3. No. of cranks 3.

Mean indicated pressure 107 lbs/sq. in. Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 6 7/8".

Is there a bearing between each crank Yes. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 46190 lbs.in². Revolutions per minute 1000.

Flywheel dia 28". Weight 508 lbs. Means of ignition Compression. Kind of fuel used Diesel.

Crank Shaft, Solid forged, Semi-built, All-built. dia. of journals as per Rule Approved. Crank pin dia 4.497". Crank Webs with 2 1/4" dia. hole slightly offset.

Flywheel Shaft, diameter as per Rule. Generator armature, moment of inertia (16 m² or Kg.-cm.²) 8000 lbs. in².

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

Are the cylinders fitted with safety valves. No. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Water Cooled manifolds.

Cooling Water Pumps, No. and how driven One Centrifugal Gear Driven. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.

Lubricating Oil Pumps, No. and size One Gear Type - 365 Gallons per hour.

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

Exhausting Air Pumps or Blowers, No. How driven.

AIR RECEIVERS:—Have they been made under Survey None supplied. State No. of Report or Certificate.

State full details of safety devices.

Are the internal surfaces of the receivers be examined and cleaned. 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.

Working Air Receivers, No. Total cubic capacity. Internal diameter. thickness.

Seamless, lap welded or riveted longitudinal joint. Material. Range of tensile strength. Working pressure.

ELECTRIC GENERATORS:—Type Sunderland Forge D.P.

Pressure of supply 110 volts. Full Load Current 318 Amperes. Direct or Alternating Current D.C.

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 shielded that they cannot be accidentally earthed, short circuited, or touched. 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 Consolidated Air Compressor No. 390840. Supplied by Messrs. Sunderland Forge Co. Ltd. Revised 26th Feb. 1953.

PLANS.—Are approved plans forwarded herewith for Shafting 9th Nov. 1951. Receivers Separate Tanks.

Have Torsional Vibration characteristics if applicable been approved Not applicable. Armature shaft Drawing No.

Are the spare gear required by the Rules been supplied In accordance with Rule Requirements.

The foregoing is a correct description,

THE NATIONAL GAS AND OIL ENGINE Co. Ltd.

Manufacturer.

J. Rowley



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Dates of Survey while building: During progress of work in shops - - 1952. July 7th, August 6th, 27th. 1953. January 30th.  
 During erection on board vessel - - -  
 Total No. of visits

Dates of Examination of principal parts: Cylinders 6.8.52. Column. 6.8.52. Covers 27.8.52. Pistons 27.8.52. Liners 7.7.52. Piston rods

Connecting rods 27.8.52. Crank and Flywheel shafts. Intermediate shafts.

Crank shaft: Material S.M. Steel. Tensile strength 42.4 Tons per sq. in.  
 Elongation 24%. Identification Marks LLOYD'S 2130 10.12.51. WJI. 4.3.52.

Flywheel shaft, Material. Identification Marks

Identification marks on Air Receivers. NONE SUPPLIED.

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.) The engine has been constructed under special survey of tested materials and in accordance with the Secretary's letters and Rule Requirements.

The materials and workmanship are good. On completion of erection, the engine direct coupled to its generator, the unit mounted on a baseplate, was tested under the following conditions of loading.

- 4 hours full engine load.
- 1 hour 125% full engine load.
- 1/2 hour 75% engine load.
- 1/2 hour 50% engine load.

Governor tried and found satisfactory.

~~Vibration test carried out at 750 rpm for 1 hour.~~

The Generator set is in my opinion suitable to be installed in a vessel classed with the Society for the purpose intended.

ATTACHED HERETO:-

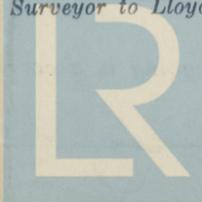
- Extract copy of Nottingham Report No. F. 2322 - covering the Crankshaft.
- (Generator Manufacturer's Test Sheet).
- Air Compressor Manufacturer's Test Sheet.

The amount of Fee ... £ 18 : 4s : 0d. When applied for 19  
 Travelling Expenses (if any) £ 2 : 0 : 0 When received 19

MAR 11

*L. Thomas*

Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation

Committee's Minute

Assigned *See F.E. survey report.*

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 (The Surveyors are requested not to write on or below the space for Committee Minutes.)