

Rpt. 4c.

## REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

25 NOV 1953

No. 13623/1953

Received at London Office

Date of writing Report 3rd July, 1953. When handed in at Local Office 17th Aug. 1953. Port of Manchester.

No. in Survey held at Manchester Date, First Survey 16th June, 1952. Last Survey 2nd July, 1953

Reg. Book. Single on the Twin Triple Quadruple Screw vessel Admiralty Fleet Attendant Oil Tankers. Number of Visits 6. Tons Gross 2219 Net 901

Built at Dundee By whom built Caledon Shipbuilding &amp; Eng. Co. Ltd. Yard No. 492 When built 1952.

Owners Port belonging to

Oil Engines made at Ashton-u-Lyne By whom made National Gas &amp; O.E. Co. Ltd. Engine No. 90246 When made 1952.

Generators made at Witton, B'ham. By whom made General Elec. Co. Ltd. Generator No. 13820/6 When made 1953.

No. of Sets 1 B.H.P. of each Set 110 M.N. as per Rule 22 Capacity of each Generator 60 Kilowatts.

Is Set intended for essential services Yes

OIL ENGINES, &amp;c.—Type of Engines National 'MA6' type Heavy Oil 2 or 4 stroke cycle 4 Single or double acting Single

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

Mean indicated pressure 107 lbs./sq. inch. Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 6.7/8" 16"

Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 68,500 lbs./in.<sup>2</sup> Revolutions per minute 750

Flywheel dia. 27" Weight 618 lbs. Means of ignition Compression Kind of fuel used Diesel

Crank Shaft, Solid forged dia. of journals as per Rule Approved with 2 1/4" dia. hole slightly offset Semi-built as fitted 5.3095 Crank pin dia. 4.497 Crank Webs Mid. length breadth 7 1/2" Thickness parallel to axis 1 1/2" All-built as fitted 5.3095 Mid. length thickness 1 1/2" Thickness round eye hole 1 1/2"

Flywheel Shaft, diameter as per Rule Generator armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 20592 lbs./sq. inch.

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

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

Cooling Water Pumps, No. and how driven Two Engine driven One Centrifugal One Fresh Water and One (Sea Water).

Lubricating Oil Pumps, No. and size One Gear Type Capacity 490 gallons per hour.

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

Scavenging Air Pumps or Blowers, No. How driven

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

(other than main engines) State full details of safety devices

Can 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

Starting 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 General Electric Co. 60 K.W.

Pressure of supply 225 volts. Full Load Current 267 Amperes. Direct or Alternating Current D.C.

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. Yes and do the results comply with the requirements. Yes

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

Details of driven machinery other than generator

PLANS.—Are approved plans forwarded herewith for Shafting 7th April, 1952. Receivers - Separate Tanks -

Have Torsional Vibration characteristics if applicable been approved 30th October, 1952 Armature shaft Drawing No. L.10599

(Statg date of approval and name of previous duplicate case, if any)

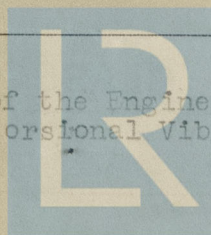
Has the spare gear required by the Rules been supplied In accordance with Rule Requirements.

The foregoing is a correct description,

and the particulars of the Engine, as supplied, are as approved for the Torsional Vibration Characteristics.

Manufacturer.

THE NATIONAL GAS AND OIL ENGINE CO. LTD.



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Dates of Survey while building { During progress of work in shops - - } 1952. June 16th, 23rd, 30th, July 2nd, 7th. 1953. July 2nd.  
{ During erection on board vessel - - } 1953. 20.10, 21.10, 23.10, 25.10, 27.10.  
Total No. of visits 11

Dates of Examination of principal parts { Liners. 24.7.52. Covers 28.7.52. Pistons 25.7.52. Column. 25.7.52. }  
Connecting rods 25.7.52. Exhaust Manifold. 28.7.52. Intermediate shafts

Crank shaft { Material Forged Steel A/4. Tensile strength 65 Kg. per sq. m.m.  
Elongation 28% Identification Marks LLOYD'S N.705 AA 1.4.53.

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers

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. The engine was found satisfactory when tested at the Builders Works under the following conditions of loading when direct coupled to its respective generator and mounted on a combined baseplate.

4 hours full load.

1 hour 110% full load.

Governor tested and found satisfactory.

The Torsional Vibration Characteristics have been approved for a service speed of 1000 R.P.M.

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

The generator set has been efficiently installed and tested under working conditions & found satisfactory

ATTACHED HERETO:-

Copy Naples Report No. 516 - covering the Crankshafts.

Manufacturers Generator Test Certificates.

The amount of Fee ... £ 11 : 10 : - { When applied for 19

Travelling Expenses (if any) £ 2 : 2 : 6 { When received 19

Committee's Minute

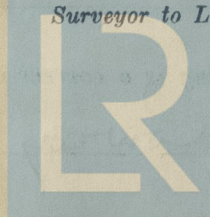
Assigned

GLASGOW

24 NOV 1953

THE ACCOMPANYING MACHINERY REPORT.

Surveyor to Lloyd's Register of Shipping.



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