

Rpt. 4c.

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14756.

Date of writing Report 6th September 1951 When handed in at Local Office 14th November 1951 Received at London Office 1951 NOV 21
 Port of MANCHESTER. **17 NOV 1951**
 No. in Survey held at ASHTON-UNDER-LYNE. Date, First Survey 20.7.51. Last Survey 20.8.1951.
 Reg. Book. Single on the Twin Screw vessel M.V. 'CLUTHA RIVER' Number of Visits 8.
Triple
Quadruple
 Built at Newcastle-U-Lyne. By whom built Hawthorn Leslie & Co. Engine No. 4098.
 Yard No. When built
 Owners Houlder Line Ltd. Port belonging to Engine No. 80023.
 Engines made at Ashton-U-Lyne. By whom made National Gas & O.E. Co. Ltd. Contract No. 6097. When made 1951.
 Generators made at Bedford. By whom made W.H. Allen & Co. Ltd. Generator No. E2-92173.
 Contract No. When made 1951.
 No. of Sets 1. Engine Brake Horse Power 111. M.N. as per Rule 28. Total Capacity of Generators 75. Kilowatts.
 Set intended for essential services Yes.

OIL ENGINES, &c.—Type of Engines National R4A3 Heavy Oil. 2 or 4 stroke cycle 4. Single or double acting Single.
 Maximum pressure in cylinders 850 lbs/sq. inch. Diameter of cylinders 9". Length of stroke 12". No. of cylinders 3. No. of cranks 3.
 Mean indicated pressure 90 lbs/sq. inch. Firing order in cylinders 1.3.2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 10 1/2".
 Is there a bearing between each crank Yes. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 586,000 lbs in² Revolutions per minute 500.
 Flywheel dia. 3'-7". Weight 1820 lbs. Means of ignition Compression. Kind of fuel used Diesel.
 Crank Shaft, dia. of journals as per Rule. 6.622". Crank pin dia. 6.372". Crank Webs Mid. length breadth 7 3/4". Thickness parallel to axis shrunk
as fitted. with 3 1/2" dia. hole slightly offset. Mid. length thickness 2 3/4". Thickness round eye hole 66820 lb
 Wheel Shaft, diameter as per Rule. Intermediate Shafts, diameter as per Rule. General armature, moment of inertia (16 m² or Kg.-cm.²) ins²
as fitted. Means provided to prevent racing of the engine when declutched — 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 Water cooled.
 Working Water Pumps, No. 1 F.W. Cent. Type. Is the sea suction provided with an efficient strainer which can be cleared within the vessel —
 Lubricating Oil Pumps, No. and size 1 - Gear Type

Compressors, No. — No. of stages — Diameters — Stroke — Driven by —
 Suctioning Air Pumps, No. — Diameter — Stroke — Driven by —
RECEIVERS:—Have they been made under Survey Yes. State No. of Report or Certificate C.15596.
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule —
 Are the internal surfaces of the receivers be examined — What means are provided for cleaning their inner surfaces —
 Is there a drain arrangement fitted at the lowest part of each receiver —
Pressure Air Receivers, No. — Cubic capacity of each — Internal diameter — thickness —
 Is less, lap welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure by Rules —
Suctioning Air Receivers, No. 1. Total cubic capacity 11 cu. ft. Internal diameter 1'-11". thickness 1/2".
 Is less, lap welded or riveted longitudinal joint Welded. Material M.S. Range of tensile strength 26/32. Working pressure by Rules 350 lbs/sq. inch.

ELECTRIC GENERATORS:—Type Open Type, drip proof, compound wound.
 Voltage of supply 110 volts. Full Load Current 680. Amperes. Direct or Alternating Current Direct.
 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 off Yes.
 Are the 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 added that they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule Yes.
 Are 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 generators 100 kw. or over have they been built and tested under survey —
 Is there any driven machinery other than generator —

VS.—Are approved plans forwarded herewith for Shafting 10.8.50. Receivers — Separate Tanks —
 (If not, state date of approval)
 Torsional Vibration characteristics if applicable been approved 30.10.50. Armature shaft Drawing No. E/53274X.
 (state date of approval)

E GEAR AS PER RULE REQUIREMENTS.

Register of Shipping.

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

THE NATIONAL GAS AND OIL ENGINE Co. Ltd.

Manufacturer.

C. K. Sauer

Dates of Survey while building During progress of work in shops - 1951. July 16, 20, 24, 25. Aug. 2, 10, 17, 20.
During erection on board vessel - Please see Rpt 4th.
Total No. of visits
Dates of Examination of principal parts Columns 24.7.51. Covers 2.8.51. Pistons 25.7.51. Liners 16.7.51.
Connecting rods 25.7.51. Crank and Flywheel shafts 24.7.51. Intermediate shafts
Crank shaft Material S.M. Steel. Tensile strength 47.2 Tons/sq.inch.
Elongation 24% Identification Marks LLOYD'S LRW.162 S.7557.
Flywheel shaft, Material Identification Marks 28.6.51. G.A.
Identification marks on Air Receivers J.H. McLaren Ltd. No. 9136 - T.P. 700 lbs/sq.inch - W.P. 350 lbs/sq.inch.
2.3.51. R.McL.

Is this machinery duplicate of a previous case? If so, state name of vessel. The engine has been constructed under

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
special survey in accordance with the Rules, approved plans and Secretary's letters.

The materials and workmanship are good.

On completion of erection, the engine mounted on its base and direct coupled to its electric generator was run under the following conditions of loading with satisfactory results:-

4 Hours at 100% Load.

1 Hour at 110% Load.

and governor tested and found satisfactory.

Torsional vibration characteristics have been approved for a service speed of 500 R.P.M.

The diesel generator set is, in my opinion, suitable to be installed in a vessel classed with

the Society for the purpose intended.

Attached hereto extract from Sheffield Rpt. 6 No. 54184 and Generator Test Sheet 27993/4314.
Air Receiver Certificate No. C.15596, together with Base-plate Cert. C.274.

SURVEY OF MACHINERY. NEWCASTLE-ON-TYNE.

This engine has been satisfactorily installed in M.V. "CLUTHA RIVER", tried under full working conditions and found efficient.

T. Shanno
SURVEYOR TO LLOYD'S REGISTER.
NEWCASTLE-ON-TYNE

The amount of Fee ... £ 5 : 12 : 0.
Travelling Expenses (if any) £ 1 : 8 : 0.

When applied for 14/11/1951 (RC).
When received 19

J.M. Kearney
Surveyor to Lloyd's Register of Shipping.

FRI. 1 AUG 1952

Committee's Minute

Assigned

See F.E. Mchly. rpt.



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Foundation