

## REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14821.

Received at London Office

Writing Report 21st November 1951. When handed in at Local Office 15th January 1952. Port of MANCHESTER. 18 JAN 1952

Survey held at HAZEL GROVE, STOCKPORT. Date, First Survey 31.8.51. Last Survey 8.11.1951.  
 Number of Visits 8.  
 Single on the Twin Triple Quadruple Screw vessel. Classed Vessel (Stock). "BRITISH LANCER"  
 Tons Gross Net  
 By whom built British Tanker Co. Ltd. Yard No. When built  
 Port belonging to London.  
 Engines made at Hazel Grove. By whom made Mirrlees, Bickerton & Day Ltd. Engine No. 39052. When made 1951.  
 Motors made at Liverpool. By whom made Campbell & Isherwood Ltd. Generator No. 46631. When made 1951.  
 Sets One. B.H.P. of each Set 135. M.N. as per Rule 34. Capacity of each Generator 75 Kilowatts.  
 Intended for essential services Yes.

ENGINES, &c.—Type of Engines Mirrlees TL3 Type oil engine. 2 or 4 stroke cycle 4. Single or double acting Single.  
 Working 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.  
 Indicated pressure 115 lbs/sq. inch. Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 8 5/8".  
 A bearing between each crank Yes. Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 3500 lb in sec<sup>2</sup>. Revolutions per minute 500.  
 Dia. 4'-6". Weight 2800 lbs. Means of ignition Compression. Kind of fuel used Pool Diesel.  
 Shaft, Solid forged dia. of journals as per Rule 5 3/4". Crank pin dia. 5.9/16". Crank Webs Mid. length breadth 9 1/2". Thickness parallel to axis —  
 Fitted to half coupling forged as fitted 5 3/4". Mid. length thickness 2.15/32" shrunk Thickness round eye-hole —  
 Crankshaft integral with Generator armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 281 lb ins sec<sup>2</sup>.  
 as fitted crankshaft.

Means provided to prevent racing of the engine Yes. Means of lubrication Forced. Kind of damper if fitted —  
 Cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Yes.  
 One Safran Cent.  
 Water Pumps, No. and how driven Type. Is the sea suction provided with an efficient strainer which can be cleared within the vessel —  
 One Engine driven Gear Type - Capacity 666 G.P.H.

Compressors, No. No. of stages Diameters Stroke Driven by  
 Air Pumps or Blowers, No. How driven

RECEIVERS:—Have they been made under Survey None. State No. of Report or Certificate  
 Details of safety devices

Internal surfaces of the receivers be examined and cleaned.  
 A drain arrangement fitted at the lowest part of each receiver

Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness  
 Lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure

Air Receivers, No. Total cubic capacity Internal diameter thickness  
 Lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure

GENERATORS:—Type Open Type, Ventilated, Drip Proof, Compound Wound.  
 Voltage of supply 110 volts. Full Load Current 682 Amperes. Direct or Alternating Current Direct.

Regulating current system, state the periodicity. Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown off Yes. Generators, are they compounded as per Rule Yes. Is an adjustable regulating resistance fitted in series with each shunt field Yes.

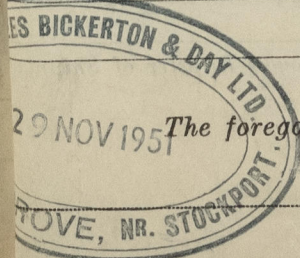
Terminals accessible, clearly marked, and furnished with sockets Yes. Are they so spaced  
 That they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule Yes.

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.  
 Generators are 100 kw. or over have they been built and tested under survey

Other driven machinery other than generator Crankshaft Drg. No. TL.800A.

Are approved plans forwarded herewith for Shafting 30.4.51. Receivers Separate Tanks  
 (If not, state date of approval) Yes, for 500 R.P.M. 30.4.51. Armature shaft Drawing No. 13221 noted 30.4.51.  
 Torsional Vibration characteristics if applicable been approved (State date of approval and name of previous duplicate case, if any)

Spare gear required by the Rules been supplied 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

Lloyd's Register  
Foundation

002524-002835-0050



Dates of Survey while building  
During progress of work in shops - 1951. Aug. 31. Sept. 7, 10, 11, 13. Oct. 2, 3. Nov. 8.  
During erection on board vessel -  
Total No. of visits.

Dates of Examination of principal parts - Cylinders 3.10.51. Covers 3.10.51. Pistons 8.11.51. Piston rods -

Connecting rods 2.10.51. Crank and Flywheel shafts 31.8.51. Intermediate shafts -

Crank shaft Material S.M. Steel. Tensile strength 67.9 kgs/sq.mm.

Elongation 50 mm. 27.0. Identification Marks L.R. 3083/305 H.K.S.

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.) This Electric Generating Set has been constructed under Special Survey of tested materials and in accordance with the Secretary's approved plans and Rule requirements. As far as could be seen, the materials used in construction appear to be sound and free from defects. Workmanship is good.

The engine, direct coupled to a 75 K.W. Campbell & Isherwood Generator was tested at the Builders' Works and found satisfactory under the following conditions of loading:-

6 hours at 100% Generator load at 500 r.p.m.

1 hour at 125% Generator load at 500 r.p.m.

Torsional vibration characteristics of the shafting installation have been examined and found satisfactory for an engine speed of 500 r.p.m.

It is stated that this Generator Set will be held in Stock, to be available for installation on a vessel classed with the Society.

Attached hereto Extract from Augsburg Cert. No. 326 and Generator Cert.

NEWCASTLE-ON-TYNE, No. 114024

This generating set has been securely fitted aboard the "BRITISH LANCER" in accordance with Rule requirements, tried under working conditions and all found in good order. Low pressure explosion relief devices fitted. Please see Newcastle Report No. 114024

R. P. Traged

NEWCASTLE-ON-TYNE

January 1952

The amount of Fee ... £ 6 : 15 : 0. When applied for 15/1/52 (RC).  
Travelling Expenses (if any) £ 1 : 17 : 6. When received 19.

L. V. Hansen.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned