

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14906.

12th February, 1952. When handed in at Local Office 26th February, 1952. Port of MANCHESTER. Received at London Office 3 MAR 1952

Survey held at MANCHESTER. Date, First Survey 28.9.51. Last Survey 29.12. 1951.

on the Single Twin Triple Quadruple Screw vessel "Carter Langanyika" Number of Visits 11.

By whom built Wm. Doxford & Co. Ltd., Yard No. 787. When built 1951.

Wm. Doxford & Co. Ltd., Overseas Tankships (UK) Ltd Port belonging to London

Lines made at Hazel Grove. By whom made Mirrlees, Bickerton & Day Ltd., Engine No. 34673

Ports made at Liverpool. By whom made Campbell & Isherwood Ltd., Generator No. 47051.

Sets Two. B.H.P. of each Set 260 (12 hr). M.N. as per Rule 65.0 each. Capacity of each Generator 150. Kilowatts.

intended for essential services Yes.

ENGINES, &c.—Type of Engines Two - TL.6 Heavy Oil. 2 or 4 stroke cycle 4. Single or double acting Single.

Mean pressure in cylinders 800 lbs/sq. inch. Diameter of cylinders 8 1/2". Length of stroke 13". No. of cylinders 6. No. of cranks 6.

Indicated pressure 118 lbs/sq. inch. Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 8 5/8".

Weight of a bearing between each crank Yes. Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 830 lbs ins sec<sup>2</sup>.

Weight 1150 lbs. Means of ignition Compression. Kind of fuel used Diesel.

Shaft, Solid forged dia. of journals as per Rule Approved. 5.9/16". Crank pin dia. 5 3/4". Crank Webs Mid. length breadth 9 1/4". Thickness parallel to axis -

Mounted on Crankshaft. Generator armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 511.0 lbs ins sec<sup>2</sup>.

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.

Water Pumps, No. and how driven 1 - Safran type Geared Pump. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.

Oil Pumps, No. and size 1 - Engine Gear type - 666 g.p.h.

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

Receiving Air Pumps or Blowers, No. How driven

RECEIVERS:—Have they been made under Survey Yes - One 5 cu. ft. per engine. State No. of Report or Certificate.

All details of safety devices Safety valve and fusible plug fitted on receiver.

Internal surfaces of the receivers be examined and cleaned Yes.

A drain arrangement fitted at the lowest part of each receiver Yes.

Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness

Is lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure

Receiving Air Receivers, No. One per engine Total cubic capacity 10 cu. ft. Internal diameter 17 1/4". thickness 3/8".

Is lap welded or riveted longitudinal joint lap welded Material M.S. Range of tensile strength Working pressure 350 lbs/sq. inch.

ELECTRIC GENERATORS:—Type Campbell & Isherwood Ltd., 150 K.W. 500 r.p.m. drip-proof, compound continuous.

Voltage of supply 110 volts. Full Load Current 1362 Amperes. Direct or Alternating Current D.C.

Operating current system, state the periodicity Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown off.

Generators, are they compounded as per Rule is an adjustable regulating resistance fitted in series with each shunt field.

Terminals accessible, clearly marked, and furnished with sockets Yes. Are they so spaced

Provided that they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule.

Generators are under 100 kw. full load rating, have the makers supplied certificates of test - and do the results comply with the requirements -

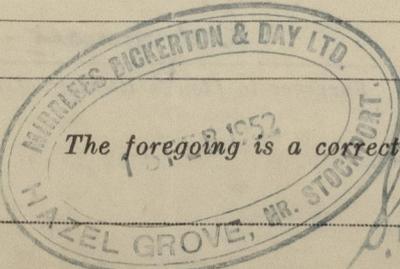
Generators are 100 kw. or over have they been built and tested under survey Yes.

of driven machinery other than generator Approved 2.7.51.

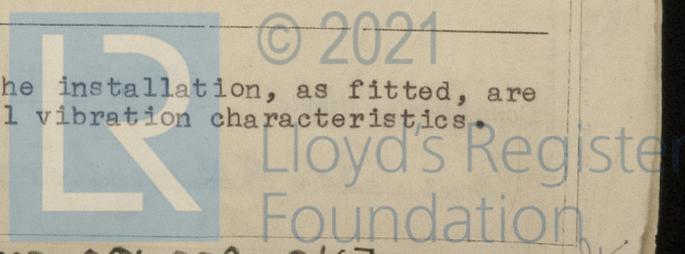
S.—Are approved plans forwarded herewith for Shafting Receivers - Separate Tanks -

Torsional Vibration characteristics if applicable been approved Approved 2.7.51. Armature shaft Drawing No. A.13562.

Is spare gear required by the Rules been supplied AS PER RULE REQUIREMENTS.



Manufacturer.



004003-004008-0167

Dates of Survey while building { During progress of work in shops - - } 1951. Sept. 7. Oct. 3, 4, 5, 7, 8, 10. Dec. 24, 27, 28, 29.  
 { During erection on board vessel - - - }  
 Total No. of visits

Dates of Examination of principal parts—Cylinders 3, 7/10/51. Covers 3, 4, 5/10/51. Pistons 24, 29/12/51. Piston rods -

Connecting rods 10.10.51. Crank and Flywheel shafts 24, 29/12.51. Intermediate shafts -

Crank shaft { Material S.M. Steel. Tensile strength 44.7 Tons/sq.inch.  
 { Elongation on 50 mm. 26.2% Identification Marks L.R. 3084/311 H.K.S. 1.9.5  
26.0% L.R. 3084/318 H.K.S. 1.9.5

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers

Is this machinery duplicate of a previous case Yes. If so, state name of vessel Doxford's Yard No. 784.

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These Diesel Generator Sets have been constructed

under special survey of tested materials and in accordance with the Secretary's letters, approved plans and Rules. As far as could be seen; the materials used in construction appear to be sound and free from defects.

The workmanship is good. The engines, direct coupled to their respective generators, were 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 approved for an operating speed of 500 r.p.m.

In the opinion of the undersigned these units are suitable for installation in a vessel classed with the Oil Fuel. It has been stated that they are intended for Doxford's Contract No. 784.181

Attached hereto:-

- Crankshaft Certificates Nos. 329.
- Generator Certificates Nos. C.7688, C.7689.
- Air Receiver Certificates Nos. C.17306 & C.17309.

The amount of Fee ... £ 26 : 0 : 0. When applied for 22.2.52.19.8.  
 Travelling Expenses (if any) £ 4 : 10 : 0. When received 19

R. V. Hausel

Surveyor to Lloyd's Register of Shipping

**JUL 8 1952**

Committee's Minute

Assigned See F.E. mech rpt. Sld. 35815



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3m.4.51.-I. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)