



Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 14927.

Date of writing Report 28th February, 1952. When handed in at Local Office 17th March, 1952. Port of MANCHESTER. Received at London Office 25 APR 52

No. in Survey held at MANCHESTER. Date, First Survey 1.9.51. Last Survey 1.3.1952. Reg. Book. Number of Visits 14.

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel. *M/S "CAITEX DELHI"* Tons } Gross 851 Net 488

Built at *Sunderland* By whom built Wm. Doxford & Co. Ltd., Yard No. 788. When built 1951. Owners ~~Wm. Doxford & Co. Ltd.~~ *Overseas Tankship (UK) Ltd* Port belonging to *London*

Oil Engines made at *Hazel Grove.* By whom made *Mirrlees, Bickerton & Day Ltd.,* Engine No. *34676.* When made 1952. Generators made at *Liverpool.* By whom made *Campbell & Isherwood Ltd.* Generator No. *47372.* When made 1952.

No. of Sets *Two.* B.H.P. of each Set *260 (12 hrs) M.N. as per Rule* *55.0 each.* Capacity of each Generator *150.* Kilowatts. Is Set intended for essential services *Yes.* *52 each*

OIL ENGINES, &c.—Type of Engines *Two - T.L.6. Heavy Oil.* 2 or 4 stroke cycle *4.* Single or double acting *Single.* Maximum 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.*

Mean 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".* Is there 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>* Revolutions per minute *500.*

Flywheel dia. *3'-6".* Weight *1150 lbs.* Means of ignition *Compression.* Kind of fuel used *Diesel.*

Crank Shaft, <sup>Solid forged</sup> ~~Cast~~ dia. of journals *5 3/4".* Crank pin dia. *5.9/16".* Crank Webs *2.15/32".* Mid. length breadth *9 1/4".* Thickness parallel to axis *-* Mid. length thickness *-* Thickness round eyehole *-*

Flywheel Shaft diameter *as per Rule.* Generator armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) *511.0 lbs ins sec<sup>2</sup>.*

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 *Yes.* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *Yes.*

Cooling 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 *-* Lubricating Oil Pumps, No. and size *One - Engine gear type - 666 G.P.H.*

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 *Yes, One 5 cu. ft. per engine.* State No. of Report or Certificate *-* (other than main engines) Safety valve and fusible plug fitted on receiver. State full details of safety devices *-*

Can the internal surfaces of the receivers be examined and cleaned *Yes.* Is there a drain arrangement fitted at the lowest part of each receiver *Yes.*

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. *One per engine.* Total cubic capacity *10 cu. ft.* Internal diameter *17 1/4".* thickness *3/8".*

Seamless, lap welded or riveted longitudinal joint *-* Material *M.S.* Range of tensile strength *W.P.V.* Working pressure *350 lbs/sq. inch.* Conforms to Class 2 Rule Requirements for *-*

ELECTRIC GENERATORS:—Type *Campbell & Isherwood Ltd., 150 K.W., 500 r.p.m., drip-proof, compound, continuous.* Pressure of supply *110.* volts. Full Load Current *1362.* 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 *-* Generators, are they compounded as per Rule *-* is an adjustable regulating resistance fitted in series with each shunt field *-*

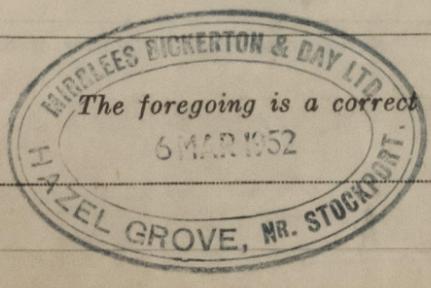
Are all terminals accessible, clearly marked, and furnished with sockets *Yes.* Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched *Yes.* Are the lubricating arrangements of the generators as per Rule *-*

If the generators are under 100 kw. full load rating, have the makers supplied certificates of test *-* and do the results comply with the requirements *-* If the generators are 100 kw. or over have they been built and tested under survey *Yes.*

Details of driven machinery other than generator *-* Approved - 2.7.51.

PLANS.—Are approved plans forwarded herewith for Shafting *-* Receivers *-* Separate Tanks *-* (If not, state date of approval) Approved 2.7.51. Armature shaft Drawing No. *A.13562.*

Have Torsional Vibration characteristics if applicable been approved *-* (State date of approval and name of previous duplicate case, if any) AS PER RULE REQUIREMENTS. Has the spare gear required by the Rules been supplied *-*



*Shawin* Manufacturer.



© 2021 Lloyd's Register Foundation

*JM*  
*3/4/52*

1952

Dates of Survey while building: During progress of work in shops - - Sept. 1, 27. Oct. 3, 5, 8, 10, 11, 12, 18. Nov. 8. Feb. 25, 26, 27. March 1. During erection on board vessel - - Total No. of visits

Dates of Examination of principal parts: Cylinders 3, 11, 12/10/51. Covers 8, 11, 12, 18/10/51. Pistons 25, 26/2/52. Piston rods - Connecting rods 10/10/51. Crank and Flywheel shafts 27/9/51. Intermediate shafts - 8/11/51. Identification Marks

Crank shaft: Material S.M. Steel. Tensile strength 44.9 and 44.6 Tons/sq.inch. Identification Marks 3083/731/322 HKS. 1.9.51. Elongation 25.6 and 27.2%. Identification Marks 3081/726/315 HKS 27.9.51.

Flywheel shaft, Material - Identification Marks - Identification marks on Air Receivers 5/286 & 5/290.

Is this machinery duplicate of a previous case? Yes. If so, state name of vessel Doxford's Yard No. 787.

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 Rule requirements. 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 engine 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 engine speed of 500 r.p.m.

In the opinion of the undersigned these units are suitable for installation in a vessel classed with the Society. It has been stated that they are intended for Doxford's Contract No. 788.

Attached hereto:- Crankshaft certs. Nos. 329 & 500. Generator " " C.7797 & C.7794. Air Receiver Certs. Nos. C.17757 & C.17761.

The amount of Fee ... £ 33 : 10 : 0 When applied for 19. 3. 19 52. Travelling Expenses (if any) £ 4 : 10 : 0 When received 19

Committee's Minute FRI. 26 SEP 1952 Assigned See F.E. ncky rpt Qld. 35873



300,000-T. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minute.)