

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 101.

4c.

Received at London Office
 of writing Report April 2nd 1948 When handed in at Local Office 9th April 1948 Port of Birmingham
 in Survey held at Birmingham Date, First Survey May 22nd 1946 Last Survey March 22nd 1948
 Book. " INTERPRETER " Number of Visits 30
 on the Single Screw vessel. Tons Gross 6815
Triple Net 4017
Quadruple
 at Sunderland By whom built Messrs Wm Doxford & Sons Ltd. Yard No. 747 When built 1948
 by J. G. Harrison Port belonging to Liverpool
 Engines made at Birmingham By whom made Messrs Belliss & Morcom Ltd. Engine No. 2493/8 When made 1948
 erators made at Liverpool By whom made Messrs Campbell & Shewood Ltd. Contract No. 9222/3 When made 1948
 of Sets 3 Engine Brake Horse Power 220 M.N. as per Rule 55 Total Capacity of Generators 450 Kilowatts.
 et intended for essential services Yes

L. ENGINES, &c.—Type of Engines Solid Injection 2 or 4 stroke cycle 4 Single or double acting Single
 imum pressure in cylinders 700 lbs/sq. in. Diameter of cylinders 8 1/2" Length of stroke 13" No. of cylinders 6 No. of cranks 6
 n indicated 800 lbs/sq. in. M.E.P. 65 lbs Firing order in cylinders 1-4-2-6-3-5 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 11 1/2"
 here a bearing between each crank Yes Moment of inertia of flywheel (16 in. or Kg.-cm.²) 1,672,000 Revolutions per minute 600
 wheel dia. 3'-5" Weight 0.9 tons Means of ignition Compression Kind of fuel used Heavy oil
 ank Shaft, dia. of journals as per Rule as per Rule Crank pin dia. 5 1/4" Crank Webs Mid. length breadth 1 1/2" Thickness parallel to axis ✓
 as fitted 6 1/4" Mid. length thickness 2 3/8" Thickness round eyehole ✓
 wheel Shaft, diameter as per Rule ✓ Intermediate Shafts, diameter as per Rule ✓ General armature, moment of inertia (16 in. or Kg.-cm.²) 551,000
 as fitted ✓ Means of lubrication Forced Kind of damper if fitted ✓
 the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material ✓
 ling Water Pumps, No. One integral with engine Is the sea suction provided with an efficient strainer which can be cleared within the vessel ✓
 ricating Oil Pumps, No. and size One geared pump integral with each engine Capacity 400 G.P.H.
 Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
 rewing Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓
R. RECEIVERS:—Have they been made under Survey Yes State No. of Report or Certificate G. 5901
 uch receiver, which can be isolated, fitted with a safety valve as per Rule Yes
 the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces ✓
 ere a drain arrangement fitted at the lowest part of each receiver Yes
Pressure Air Receivers, No. ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness ✓
 nless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓
 ing Air Receivers, No. One Total cubic capacity 20 cubic feet Internal diameter 2'-3" thickness 7/16"
 nless, lap welded or riveted longitudinal joint Riveted Material Mild Steel Range of tensile strength 28/32 tons Working pressure by Rules as per Rule
ELECTRIC GENERATORS:—Type Single pedestal, compound wound, multi-polar, open type drip-proof
 sure of supply 220 volts. Full Load Current 682 Amperes. Direct or Alternating Current Direct
 Alternating current system, state the periodicity ✓ Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown
 nd off Yes Generators, are they compounded as per Rule Yes is an adjustable regulating resistance fitted in series with each shunt field Yes
 all terminals accessible, clearly marked, and furnished with sockets Yes Are they so spaced Yes
 ielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes
 e generators are under 100 kw. full load rating, have the makers supplied certificates of test ✓ and do the results comply with the requirements ✓
 e generators are 100 kw. or over have they been built and tested under survey Yes
 ils of driven machinery other than generator Gear driven cooling water pumps of 3,000 G.P.H. Capacity each
INS.—Are approved plans forwarded herewith for Shafting Yes Copy ✓ Crankshaft Receivers as per Rule Separate Tanks ✓
 (If not, state date of approval) Yes 14/9/45 Armature shaft Drawing No. A.9562
 Torsional Vibration characteristics if applicable been approved Yes (state date of approval)
RE GEAR 10 Exhaust Valves, 1 Inlet Valve, 1 Air S. Valve, 1 Indicator & Relief V., 1 Fuel Inj. Nozzle Hlder, 12 Fuel Spr. Nozzles, 30 Piston Rings,
 12 Ring, 1 Fuel Pump, 6 Cyl. hd. Studs & Nuts, 1 Gudgeon Pin & Nuts, 2 B.E. bearing Bolts & Nuts, 1 B.E. Bearing Splate, 1 T.E. Bush, 2 M.B.
 Nuts, 9 F.P. to Sprayer pipes, 3 F.P. Elements, 3 F.P. Delv. Stg., 3 Washers Del. V. Conn., 3 Spiral Springs for Sprayer, 3 DELV. V. Springs,
 3 Springs, 3 pins for Inlet Nipple, 3 pins DELV. V. Holders, 3 Locking pin joints, 3 pins for Vent. Screws, For Generator:—
 1 set carbon brushes, 2 brush holders.

The foregoing is a correct description,

For Belliss & Morcom Limited.

Manufacturer.

H. E. Munkley

015183-015187-0162

Lloyd's Register
Foundation

Dates of Survey while building
During progress of work in shops - - 1946/may 22 June 17 July 15, 19, Aug: 19, Oct 14, Dec 28, Dec 12, 1947/Jan 6, Apr 11/15, June 2
During erection on board vessel - - July 11, Oct 14, 16, 20, 24, Nov 12, Dec 8, 1948/Jan 1, 8, 14, 23, 29, Mar 1, 3, 10, 12, 18, 2
Total No. of visits 30

Dates of Examination of principal parts—Cylinders 14/10/47, 20/10/47, 8/1/48 Covers 14/10/47, 27/10/47, 8/1/48 Pistons 12/11/47 Piston rods ✓
Connecting rods 6/1/47 Crank and Flywheel shafts 8/12/47, 12/11/47, 14/10/47 Intermediate shafts ✓

Crank shaft Material Siemens Martin OH Acid Steel Forgings Tensile strength TEST N° 188-28.8% N° 207-29.6% N° 249-30.1%
Elongation TEST N° 188-36% N° 207-35% N° 249-34% Identification Marks BH 12/7/46 FS BH 21/8/46 FS BH 24/11/46 FS

Flywheel shaft, Material ✓ Identification Marks ✓

Identification marks on Air Receivers For air Starting:- N° 15106

H.T. 500 lbs/sq in
W.P. 300 lbs/sq in
10.9.47 M.F.

Is this machinery duplicate of a previous case. Yes If so, state name of vessel "M.V. HERDSMAN." (BHAM RPT)

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These Three 150 K.W. Auxiliary Oil Engine Electric Generating Sets, Engine N°s 2493/8, 2499/2504 and 2505/10 have been built under Special Survey and in accordance with approved plans.

Electric machines by Messrs. Campbell and Ischemwood Ltd; were coupled up on the fabricated combined baseplate to their prime mover as follows:-

Generator N° 38622 to Engine N° 2493/8

Generator N° 38623 to Engine N° 2499/2504

Generator N° 38624 to Engine N° 2505/10.

Each completed set has undergone running trials of six hours duration on maximum rated full load, with one hour of the period on 10% overload at the conclusion of which temperature rise on generator parts was found amply with the requirements of the Rules.

Subsequently, governor test, voltage regulation and air starting tests were carried out with satisfactory results.

Minor critical speeds were noted at approx: 460 and 550 R.P.M. on Engine N° 2493/8

" " " " " " 465 and 555 R.P.M. on Engine N° 2499/2504

" " " " " " 465 and 555 R.P.M. on Engine N° 2505/10

The engines were opened up after running trials and working parts were examined and found or put in good working condition.

The workmanship and materials used in the construction of these sets were found to be good and sound, so far as could be ascertained.

These engines have been despatched to Sunderland for installation in the vessel.

The amount of Fee ... £ 24: 15: - When applied for 9th APRIL 1948.

Travelling Expenses (if any) £ : : When received 19

Committee's Minute

Assigned

In witness see J.E. R.W.

FRI. 21 MAY 1948

J. Southern
Surveyor to Lloyd's Register of Shipping.



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