

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 224.

Received at London Office 10 SEP 1947
 Date of writing Report 19 When handed in at Local Office 19 Port of NOTTINGHAM.
 No. in Survey held at Lincoln Date, First Survey Last Survey 19
 Reg. Book. 36812 on the ^{Single} ~~Triple~~ ^{Double} ~~Quadruple~~ Screw vessel S.S. "ARABIA"
 Number of Visits
 Tons { Gross 8723
 Net 5001
 Built at Sunderland. By whom built Laing's. Yard No. 774 When built 1947
 Owners Cunard White Star Ltd. Port belonging to Liverpool.
 Oil Engines made at Lincoln. By whom made Ruston & Hornsby Ltd. Contract No. 3974/T/13/450096-99 When made 1947.
 Generators made at Sunderland. By whom made Sunderland Forge & Eng. Co. Ltd. Contract No. When made
 No. of Sets 4 Engine Brake Horse Power 300 M.N. as per Rule 75 Total Capacity of Generators 820 Kilowatts.
 Is Set intended for essential services yes

OIL ENGINES, &c.—Type of Engines 5VEBZ. No. 243448: 243450: 243449: 243451. 2 or 4 stroke cycle 4 Single or double acting SA ✓
 Maximum pressure in cylinders 675 lbs. Diameter of cylinders 10 1/2" Length of stroke 14 1/2" No. of cylinders 5 No. of cranks 5
 Mean indicated pressure 99.5 lbs. Firing order in cylinders 1-3-5-4-2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 12.5/16"
 Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m² or Kg.-cm.²)—Revolutions per minute 500 ✓
 Flywheel dia. 4'-6" Weight 24 1/2" Means of ignition Compression Kind of fuel used Diesel Oil.
 Crank Shaft, dia. of journals as per Rule 8" Crank pin dia. 6 1/2" Mid. length breadth 11" Thickness parallel to axis —
 as fitted — Crank Webs Mid. length thickness 3.7/16" Thickness round eyehole —
 Flywheel Shaft, diameter as per Rule — Intermediate Shafts, diameter as per Rule — General armature, moment of inertia (16 m² or Kg.-cm.²) —
 as fitted C Shaft.

Are means provided to prevent racing of the engine when declutched 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 Laggings
 Cooling Water Pumps, No. One, attached to each machine Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Lubricating Oil Pumps, No. and size One 750 Galls. per Hour. ✓ engine driven.

Air Compressors, No. One No. of stages 2 Diameters 6"-1 1/4" x 2 1/2" Stroke 4 1/2" Driven by Steam
 One 6"-4 1/2" x 2 1/2" Stroke 4 1/2" Driven by Electric

Scavenging Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓

AIR RECEIVERS:—Have they been made under Survey ✓ State No. of Report or Certificate ✓

Is each receiver, which can be isolated, fitted with a safety valve as per Rule ✓

Can 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 ✓

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 by Rules ✓

Starting Air Receivers, No. Two Total cubic capacity 11 1/2 ft cub Internal diameter 24 3/4" thickness 5/16"

Seamless, lap welded or riveted longitudinal joint Welded Material Steel Range of tensile strength 26/30 Working pressure by Rules 300 lb.

ELECTRIC GENERATORS:—Type Drip proof Compound Wound. Machine Nos. G.5916B: G.5916A.
 G.5916C: G.5916D.

Pressure of supply 220 volts. Full Load Current 932 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. Yes 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

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

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. Stated done by Sld. Surveyors.

Details of driven machinery other than generator. ✓

PLANS.—Are approved plans forwarded herewith for Shafting Standard. 20.12.38. Receivers. Separate Tanks.

Have Torsional Vibration characteristics if applicable been approved. Yes, identical with Laing's Armature shaft Drawing No. Yd. 769.

SPARE GEAR To rule requirements.

Ruston & Hornsby Limited
 The foregoing is a correct description,

11/11/47 25 VIII 47 Manufacturer.

Oil & Gas Engine Dept.



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Lloyd's Register
 Foundation

011603-011609-0110

Dates of Survey while building { During progress of work in shops - - }
{ During erection on board vessel - - }
Total No. of visits

Dates of Examination of principal parts—Cylinders 9.4.47: 23.4.47: 5.5.47: 21.7.47: Covers 9.4.47: 23.4.47: 5.5.47: 21.7.47: Pistons 9.4.47: 23.4.47: 5.5.47: 21.7.47: Piston rods

Connecting rods 9.4.47: 23.4.47: 5.5.47: 21.7.47: Crank and Flywheel shafts 21/2/47: 12/2/47: 8/11/47: 11/4/47: 9/4/47: 23/4/47: 5/5/47: 21/7/47: Intermediate shafts

Crank shaft { Material Steel. Tensile strength LL.1078. RD.5670. Identification Marks LL. 802. RD.4820. T.D.S. Elongation LL. 585. RD.4680. LL.1077. RD.5669.

Flywheel shaft, Material Identification Marks

Identification marks on Air Receivers 13/450096/9 13/450096/9
E 5506 E 5507
28-3-47 29-3-47
HT 600 H.P. HT 600 H.P.
WP 300 H.P. WP 300 H.P.

Is this machinery duplicate of a previous case Yes If so, state name of vessel Standard. Sir James Laing, Vd. No. 769.

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

This machinery has been built under Special Survey, in accordance with the approved plans and regulations of the Society, material and workmanship being good.

On completion, the generating sets were tested in the shops under working conditions with satisfactory results.

The generating sets have been forwarded to Sunderland for installation on board the vessel.

The amount of Fee ... £ 11: 5 : 0 When applied for 8-9- 19 47.
per vessel.
Travelling Expenses (if any) £ : : When received 19

Committee's Minute
Assigned Su F.E. mch. 1948

FRI. 30 JAN 1948

