

RECEIVED
1 JUN 1944

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 11842

18 JAN 1945

31 MAY 1944

Received at London Office

Date of writing Report 18. 5. 44 When handed in at Local Office 29.5.44. 19 Port of MANCHESTER.
No. in Survey held at HAZEL GROVE, NR. STOCKPORT. Date, First Survey 6th March, Last Survey 3rd May, 19 44.
Reg. Book. Number of Visits Eight.

on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel **EMPIRE WILSON** Tons { Gross 9916 Net 7113
Built at GLASGOW. By whom built Barclay Curle & Co. Ltd. Yard NEW.142 When built 1944.

Oil Engines made at HAZEL GROVE. By whom made Mirrlees, Bickerton & Day Sunderland Forge & Engineering Co. Ltd. Engines 6018/19/20. When made 1944.
Generators made at SUNDERLAND. By whom made Engineering Co. Ltd. Generators No. G.1666A, When made 1944.

No. of Sets 3 Engine Brake Horse Power (885) ^{295 each.} Nom. Horse Power as per Rule 253 Total Capacity of Generators 600 Kilowatts.
Each engine replaced by Mirrlees, 4500A, coupled to original dynamo 10.47

IL ENGINES, &c.—Type of Engines Direct Injection Heavy Oil. 2 or 4 stroke cycle 4 Single or double acting Single.
Maximum pressure in cylinders 750. ✓ Diameter of cylinders 8.5" ✓ Length of stroke 13.75" No. of cylinders 6 No. of cranks 6. ✓
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 8.625" Is there a bearing between each crank Yes. ✓

Revolutions per minute 600. ✓ Flywheel dia. 2' -9.5" Weight 990 lbs. Means of ignition Compression Kind of fuel used Heavy Oil.
Crank Shaft, dia. of journals as per Rule Approved and as fitted 5.75" ✓ Crank pin dia. 5.5625" ✓ Crank Webs Mid. length breadth 8.5" ✓ Thickness parallel to axis -
as fitted 5.75" ✓ Mid. length thickness 2.469" ✓ Thickness around eye-hole -

Flywheel Shaft, diameter as per Rule Flywheel mounted on Crankshaft Intermediate Shafts, diameter as fitted - Thickness of cylinder liners .625" ✓
Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. ✓ Means of lubrication Forced.

Are the cylinders fitted with safety valves Yes. ✓ Are the exhaust pipes and silencers water cooled or lagged with non-conducting material -
Cooling Water Pumps, No. None. Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Lubricating Oil Pumps, No. and size One - Gear Type. 800 gallons per hour. ✓
Air Compressors, No. None. No. of stages - Diameters - Stroke - Driven by -
Scavenging Air Pumps, No. None. Diameter - Stroke - Driven by -

AIR RECEIVERS:—Have they been made under Survey Yes. State No. of Report or Certificate Nottingham C.2537.
Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.

Can the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces handhole.
Is there a drain arrangement fitted at the lowest part of each receiver Yes.

High Pressure Air Receivers, No. None. ✓ 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. One. ✓ Total cubic capacity 11 cu. ft. ✓ Internal diameter 2' 0 3/4" ✓ thickness 5/16" ✓

Seamless, lap welded or riveted longitudinal joint Seamless. Material S.M. Steel. Range of tensile strength 26/30 tons Working pressure by Rules 300. ✓
(2 Dished ends riveted and welded circumferentially)
ELECTRIC GENERATORS:—Type Open type, compound wound.

Pressure of supply 220 / volts. Full Load Current 910 Amperes. Direct or Alternating Current Direct.
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. ✓

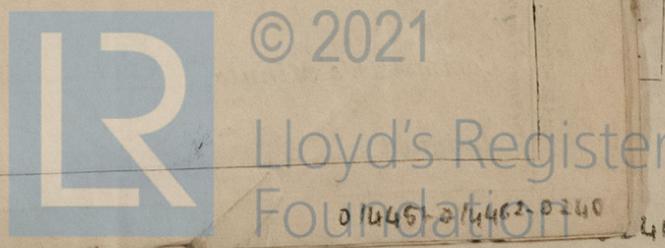
Generators, are they compounded as per rule Yes. ✓ is an adjustable regulating resistance fitted in series with each shunt field Yes
Are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule 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 Yes (Reports attached).
PLANS. Are approved plans forwarded herewith for Shafting 1.1.43. ✓ Receivers - Separate Tanks -

SPARE GEAR THE REQUIREMENTS OF THE RULES HAVE BEEN SUPPLIED WITH THE FOLLOWING EXCEPTIONS:-
6 - OIL FUEL SPRAYERS, 1 - CONNECTING ROD TOP END BEARING AND 1 - CONNECTING ROD BOTTOM END BEARING.
THE ENGINE BUILDERS ARE IN COMMUNICATION WITH THE SHIP BUILDINGS REGARDING AN ORDER FOR THESE PARTS.

GLASGOW 7-12-44. The above spare gear has now been placed on board
M.B.

The foregoing is a correct description,
MIRRELEES, BICKERTON & DAY, LIMITED
D. Brownlow. Manufacturer.



Dates of Survey while building { During progress of work in shops - -) 6.3.44, 8.3.44, 9.3.44, 16.3.44, 25.4.44, 27.4.44, 28.4.44, 3.5.44.
 { During erection on board vessel - - -)
 Total No. of visits

Dates of Examination of principal parts—Cylinders 8.3.44. Covers 6.3.44. Pistons 27.4.44.
 9.3.44. 8.3.44. 28.4.44. Piston rods -
 16.3.44. 9.3.44. 3.5.44.
 Connecting rods 27.4.44, 28.4.44, 3.5.44. Crank and Flywheel shafts 22.7.43, 12.10.43. Intermediate shafts -
 Crank and Flywheel shafts, Material O. H. Steel. Identification Marks LLOYDS. 1954 1959 2066
 DAT. DAT. FH.
 Intermediate shafts, Material - Identification Marks -
 Identification marks on Air Receivers No. E.4158. LLOYD'S TEST. 600 lbs/sq.in. W.P. 300 lbs/sq.in. JNB.12.5.44

Is this machinery duplicate of a previous case No. If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c. THESE ENGINES HAVE BEEN CONSTRUCTED UNDER SPECIAL SURVEY, OF TESTED MATERIALS, AND IN ACCORDANCE WITH THE SECRETARY'S LETTERS, APPROVED PLANS AND THE REQUIREMENTS OF THE RULES. THE MATERIALS AND WORKMANSHIP ARE GOOD.

THE ENGINES WERE FOUND SATISFACTORY WHEN TESTED IN THE SHOP WITH THEIR ELECTRIC GENERATORS AND UNDER FULL WORKING CONDITIONS.

IN OUR OPINION, THESE ENGINES ARE SUITABLE FOR THEIR INTENDED PURPOSE ON BOARD A VESSEL CLASSED WITH THIS SOCIETY.

The amount of Fee ... £ 25 : 6 : { When applied for, 29/5/1944
 Travelling Expenses (if any) £ 2 : - : { When received, 19.....

W. J. Ferguson for self and D. A. Taylor.
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 16 JAN 1945

Assigned SEE ACCOMPANYING MACHINERY REPORT.



Im. 438.—Transfer. (MADE AND PRINTED IN ENGLAND)
 (The Surveyors are requested not to write on or below the space for Committee Minute.)

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