



Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 225.

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. Number of Visits

on the <sup>Single</sup> ~~Twin~~ <sup>Triple</sup> ~~Quadruple~~ Screw vessel **LEMBULUS.** Tons { Gross 6502.57  
Net 3593.62  
Built at Newcastle. By whom built Wallsend Slipway & Eng. Co. Ltd. Yard No 1755  
When built ENWAY 1001.

Owners **ANGLO-SAXON PETROLEUM CO LTD** Port belonging to **LONDON**

Oil Engines made at Lincoln. By whom made Ruston & Hornsby Ltd. Contract No 450718. When made 1947.

Generators made at Sunderland. By whom made Sunderland Forge & Eng. Co. Ltd. Contract No. When made

No. of Sets 1 Engine Brake Horse Power 54 M.N. as per Rule 13.5 Total Capacity of Generators 30 Kilowatts.

Is Set intended for essential services **For Lighting.**

**OIL ENGINES, &c.**—Type of Engines 4VPHZ. Eng. No. 247297. 2 or 4 stroke cycle 4 Single or double acting SA

Maximum pressure in cylinders 1000 lbs. Diameter of cylinders 5.3/8" Length of stroke 8" No. of cylinders 4 No. of cranks 4

Mean indicated 109 pressure lbs. Firing order in cylinders 1-3-4-2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 6.25/32"

Is there a bearing between each crank Yes  Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 2240 lbs.ft.<sup>2</sup> Revolutions per minute 675

Flywheel dia 2'8" Weight 510 lbs. Means of ignition Compression. Kind of fuel used Diesel Oil.

Crank Shaft, dia. of journals as per Rule 4.3/16" Crank pin dia 3 1/4" Crank Webs Mid. length breadth 5 3/4" Thickness parallel to axis -  
as fitted 4.3/16" Crank pin dia 3 1/4" Crank Webs Mid. length thickness 1 3/4" Thickness round eye-hole -

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule General armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) as fitted -

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

Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Lubricating Oil Pumps, No. and size one 376 gals. per hour. engine driven.

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

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. Total cubic capacity Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules

**ELECTRIC GENERATORS:**—Type No. G. 6377.

Pressure of supply 110 volts. Full Load Current 273 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 Yes  and do the results comply with the requirements Yes

If the generators are 100 kw. or over have they been built and tested under survey

Details of driven machinery other than generator Chain drive. Hamworthy circulating pump No. 66779.

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

Have Torsional Vibration characteristics if applicable been approved (state date of approval) Armature shaft Drawing No.

**SPARE GEAR**

Ruston & Hornsby Limited,

The foregoing is a correct description,

Hand to (u4) Manufacturer.  
Oil & Gas Engine Dept.



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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 29/11/46. Covers 29/11/46. Pistons 29/11/46. Piston rods -

Connecting rods 29/11/46. Crank and Flywheel shafts 27/11/46: 29/11/46. Intermediate shafts.....

Crank shaft { Material S.M. Steel. Tensile strength.....  
 Elongation..... Identification Marks LL.864. RD. 1960. TDS.

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 Standard Type. Hawthorn Leslie 4038.

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

This engine has been built under Special Survey, in accordance with approved Plans and Regulations of the Society, material and workmanship being good.

On completion the set was tried in the shops under working conditions and found satisfactory.

The set has been forwarded to Newcastle for installation on board the vessel.

*This 30 Kw. Oil Engine / Elec. Generator Set  
 Ruston Hornsby Eng No 247297. has been satisfactorily  
 fitted on board M.V. LEMBULLUS. and tested under full  
 working conditions.*

*A Watt  
 Newcastle on Tyne  
 19<sup>th</sup> March 1948.*

SURVEYOR TO LLOYD'S REGISTER.  
 NEWCASTLE-ON-TYNE.

The amount of Fee ... £ 4 : - : - { When applied for 8-9- 1947.  
 Travelling Expenses (if any) £ : : { When received 19.....

FRI. 30 APR 1948

Committee's Minute.....

Assigned *See F.B. maly rpt*



ML 101,846-7. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)