

Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

No. **13838**

**29 JUL 1953**

Date of writing Report **26.6.53** When handed in at Local Office **4.7.53** Port of **TRIESTE** Received at London Office

No. in Survey held at **TRIESTE** Date, First Survey **See Rpt. 4b** Last Survey **17 JUNE 1953**

91629 on the **Single** Screw vessel **Motor Vessel "E.L. N.I.L."** Number of Visits

Built at **TRIESTE** By whom built **Cantieri Riuniti dell'Adriatico** Yard No. **1779** When built **1953**

Owners **Alexandria Navigation Co., S.A.E.** Port belonging to **Alexandria**

Oil Engines made at **Trieste** By whom made **Cantieri Riuniti dell'Adriatico** Contract No. **5583/45** When made **1953**

Generators made at **Monfalcone** By whom made **DO** Contract No. **78288/9** When made **1953**

No. of Sets **3** Engine Brake Horse Power **1 at 202** M.N. as per Rule **1 at 50.5** Total Capacity of Generators **324.5 Kilowatts.**

Is Set intended for essential services **yes**

**OIL ENGINES, &c.**—Type of Engines **C.R.D.A. - SUIZER 3 and 5/BH 22** 2 or 4 stroke cycle **4** Single or double acting **single**

Maximum pressure in cylinders **60 kg/cm<sup>2</sup>** Diameter of cylinders **220 mm** Length of stroke **320 mm** No. of cylinders **1 at 5** No. of cranks **5 & 3**

Mean indicated pressure **5.92 kg/cm<sup>2</sup>** Firing order in cylinders **1,3,5,4,2,** Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **248 mm**

Is there a bearing between each crank **yes** Moment of inertia of flywheel **(16 m<sup>2</sup> or Kg-cm<sup>2</sup>)** **1200** P.D. **2** **1450** Revolutions per minute **500**

Flywheel dia. **1500 mm** Weight **820 Kg.** Means of ignition **Comp'n** Kind of fuel used **Heavy Oil**

Crank Shaft, dia. of journals **as per Rule. as appd.** Crank pin dia. **145 mm** Crank Webs **5 & 3 cyl. 64 mm** Thickness parallel to axis **shrunk**

**GEN. SHAFT** **as per Rule. as appd.** Intermediate Shafts, diameter **as per Rule.** General armature, moment of inertia **(16 m<sup>2</sup> or Kg-cm<sup>2</sup>)** **5 cyl. 250**

**Flywheel Shaft** diameter **as fitted. 160 mm** **3 cyl. 70**

Are means provided to prevent racing of the engine when de-clutched **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~~ lagged with non-conducting material **yes**

Cooling Water Pumps, No. **1 attached on each** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **yes**

Lubricating Oil Pumps, No. and size **1 attached to each 1600 Lit/hr.** **1 standby 9 tons/hr.**

Air Compressors, No. **2** No. of stages **2** Diameters Capacity **135 cu. mts/hr. each** Driven by **Elect. Motors**

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

**AIR RECEIVERS**—Have they been made under Survey **yes** State No. of Reports or Certificate **Genoa 93/2**

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 **✓**

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 by Rules **✓**

Starting Air Receivers, No. **1 (M.E. Air Receiver also connected to line)** Total cubic capacity **100 Lit.** Internal diameter **303 mm** thickness **7.5 mm**

Seamless, lap welded or riveted longitudinal joint **seamless** Material **S.M.S.** Range of tensile strength **60.6 Kg/mm<sup>2</sup>** Working pressure by Rules **40 Kg/cm<sup>2</sup>**

**ELECTRIC GENERATORS**—Type **C.R.D.A. 1 at D.316 2 at D.160 Protected self ventilated**

Pressure of supply **220** volts. Full Load Current **1 at 136.5** 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 **yes**

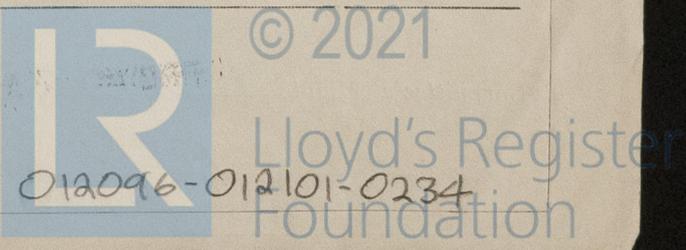
Details of driven machinery other than generator **none**

**PLANS**—Are approved plans forwarded herewith for Shafting **yes** Receivers **✓** Separate Tanks **✓**

Have Torsional Vibration characteristics if applicable been approved **11th Nov. 1952** Armature shaft Drawing No. **6543-15/1**

**SPARE GEAR** **To Rule requirements.**

Cantieri Riuniti dell'Adriatico is a correct description,  
**FABBRICA MACCHINE S. ANTONIA** Manufacturer.



Dates of Survey while building { During progress of work in shops - - ) Please see Rpt. 4b  
 { During erection on board vessel - - )  
 Total No. of visits

Dates of Examination of principal parts—Cylinders Sept. 1952 Covers Nov/Dec. 1952 Pistons Nov. 1952 Piston rods ✓

Connecting rods May 1952 Crank and Flywheel shafts 23.6.52 - 15.9.52 13.10.52 Intermediate shafts ✓

Crank shaft { Material E.F.S. Tensile strength 5throws 57.2 kg. 3throws 53.1 Kg/mm<sup>2</sup>  
 Elongation 5throw 31% on 4d 3throw 35% on 4d 33.3% on 4d Identification Marks LLOYD'S S.S. 2086, 2240 & 2241 (with Surveyors' initials & date)

Flywheel shaft, Material Identification Marks ✓

Identification marks on Air Receivers Bottle DALMINE 2-61054

LLOYD'S TEST 80 Kg/cm<sup>2</sup> W.P. 40 Kg/cm<sup>2</sup>  
 G.M. 31.10.52

Is this machinery duplicate of a previous case yes If so, state name of vessel M/V "STAR OF ALEXANDRIA" (C.R.D.A. Yard 1778)

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

These engines have been constructed under special survey in accordance with the Society's Rules, the Secretary's letters and approved plans.  
 The important forgings and castings were made, inspected and tested in accordance with the Rules.  
 The workmanship and materials are good.  
 These engines have been installed on board in an efficient manner and found satisfactory when tested under full working conditions.  
 The emergency generator engine made by Motorwerke Mannheim A.G., N°.2725/43 Augsburg Report 4c N°.169, has also been fitted on board in an efficient manner and found satisfactory under full working load.  
 In my opinion these engines are eligible for full classification.

The amount of Fee ... £ 69.10.00 When applied for 4 7 19 13  
 Travelling Expenses (if any) £ see rpt 4b When received 19

Committee's Minute FRIDAY - 7 AUG 1953  
 Assigned See F.E. weekly rpt.



Form 4.48-T. (MADE AND PRINTED IN GREAT BRITAIN)  
 (The Surveyors are requested to write on or below the space for Committee Minute.)