

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 2970.

Received at London Office **2 JUL 1951**

Date of writing Report 29/6 1951. When handed in at Local Office 29/6 1951. Port of M A L M Ö.

Survey held at M A L M Ö. Date, First Survey 3/1 Last Survey 21/6 1951. Number of Visits 40.

No. in Reg. Book 96235. Single on the Twin Triple Quadruple Screw vessel m/t "S V I T H I O D". Tons Gross 10.555 Net 7.827.

built at Malmö. By whom built Kockums Mek. Verkstads A.-B. Yard No. 325 When built 1951.

owners Stockholms Rederi A.-B. Svea. Port belonging to Stockholm.

Engines made at Malmö. By whom made Kockums Mek. Verkstads A.-B. Engine 551 Contract No. 552 When made 1951.

Generators made at Västerås. By whom made ASEA. Contract No. - When made 1951.

No. of Sets 2. Engine Brake Horse Power 220. M.N. as per Rule 55. Total Capacity of Generators 2x150 Kilowatts.

Set intended for essential services Yes.

**OIL ENGINES, &c.**—Type of Engines Heavy Oil KMV MAN G 4 V 42. 2 or 4 stroke cycle 4. Single or double acting Single.

Maximum pressure in cylinders 45 kg/cm<sup>2</sup>. Diameter of cylinders 275 mm. Length of stroke 420 mm. No. of cylinders 4. No. of cranks 4.

Lean indicated pressure 5.5 kg/cm<sup>2</sup>. Firing order in cylinders 1-3-4-2. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 350 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>) 7506.4. Revolutions per minute 350.

Flywheel dia. 1650 mm. Weight 1675 kg. Means of ignition Compression. Kind of fuel used Heavy Oil.

Crank Shaft, dia. of journals as per Rule 170 mm. Crank pin dia. 170 mm. Crank Webs Mid. length breadth 280 mm. Thickness parallel to axis - Mid. length thickness 85 mm shrunk. 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>) 680.53.

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 Lagged.

Cooling Water Pumps, No. 1 salt water pump 36 m<sup>3</sup>/H. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.

Lubricating Oil Pumps, No. and size 1 - 2 m<sup>3</sup>/H to each engine.

Air Compressors, No. None. No. of stages - Diameters - Stroke - Driven by -.

Saving Air Pumps, No. None. Diameter - Stroke - Driven by -.

**AIR RECEIVERS:**—Have they been made under Survey Yes. State No. of Report or Certificate No. 188 & 189.

Each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.

Are the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces Manhole.

Is there a drain arrangement fitted at the lowest part of each receiver Yes.

High Pressure Air Receivers, No. 1. Cubic capacity of each 200 lit. Internal diameter 474 mm. thickness 13 mm.

Seamless, lap welded or riveted longitudinal joint El. welded. Material S.M. Steel. Range of tensile strength 44.4-47.4 kg/mm<sup>2</sup>. Working pressure by Rules -.

Working Air Receivers, No. 2. Total cubic capacity 20.4 m<sup>3</sup>. Internal diameter 1650 mm. thickness 27 mm.

Seamless, lap welded or riveted longitudinal joint Riveted. Material S.M. Steel. Range of tensile strength 47.2-50.5 kg/mm<sup>2</sup>. Working pressure by Rules -.

**ELECTRIC GENERATORS:**—Type ASEA LE 125 (Open ventilated).

Pressure of supply 230 volts. Full Load Current 652 Amperes. Direct or Alternating Current Direct.

Is the alternating current system, state the periodicity - Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown 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 shielded that they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule Yes.

Do the generators are under 100 kw. full load rating, have the makers supplied certificates of test - and do the results comply with the requirements -.

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

Details of driven machinery other than generator Aux. air compressors No. of stages Two Diameters 300 & 110 mm. Stroke 220 mm.

**PLANS:**—Are approved plans forwarded herewith for Shafting 23.7.48. Receivers 23.10.47. Separate Tanks -.

Are torsional vibration characteristics if applicable been approved Yes. 23/7/48 p. 350. Armature shaft Drawing No. S-11424.

**SPARE GEAR** As per Rule supplied.

Additional spare gear supplied:- 1 cylinder liner, 1 cylinder cover, 2 pistons with gudgeons and gudgeon pins.

The foregoing is a correct description,  
**KOCKUMS**  
MEKANISKA VERKSTADS AKTIEBOLAG  
Manufacturer.



Dates of Survey while building { During progress of work in shops - - } 3/1, 1951 - 18/4, 1951.  
 { During erection on board vessel - - } 7/5, 1951 - 21/6, 1951.  
 Total No. of visits 40.

Dates of Examination of principal parts—Cylinders 20.22/1-51. Covers 23/10, 18.28/12-50. Pistons 23.2.51. Piston rods -

Connecting rods 25/11-48, 13.17.27/1-49. Crank and Flywheel shafts 24.5.50. Intermediate shafts -

Crank shaft { Material S.M. Steel. Tensile strength 54.6 - 57.2 kg/mm<sup>2</sup>  
 Elongation 31.0 - 35.0 % Identification Marks LLOYD'S Nos. 1713, 1714, AS. 24.5.50

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers Nos. 188 & 189 LLOYD'S TEST 44 kg/cm<sup>2</sup>, W.P. 30 kg/cm<sup>2</sup> AB. 13.11.50.

Is this machinery duplicate of a previous case Yes. If so, state name of vessel M/T "Venus" Malmö Report No. 2747.

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

See report of main engine.

50.4.48-T. (MADE AND PRINTED IN SWEDEN)  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Fee ... £r. : 390:- { When applied for 29/6 1951.  
 Travelling Expenses (if any) £ : : { When received 19

FRI. 20 JUL 1951

Committee's Minute  
 Assigned See F.E. Welch. spk.

