

Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 2380

Date of writing Report 22.8.49 When handed in at Local Office 19 Port of Stockholm Received at London Office 29 AUG 1949

No. in Survey held at Norrköping Date, First Survey 28.10.48 Last Survey 20.7.1949

Reg. Book. 95857 on the ~~Double~~ <sup>Single</sup> Screw vessel m.s. "NORDHEM" Number of Visits 23

Built at Norrköping By whom built A/B Norrköpings Varv & Verkstad Yard No. 124 When built 1949

Owners Rederi A/B Manhem Port belonging to Stockholm

Oil Engines made at Colchester By whom made Davey, Paxman & Co. Ltd. Engine No. Aft 3739 When made 1944

Generators made at Dursley & Alloa By whom made Mawdsley's & Harland Eng. Co. Generator No. TX 1006 When made 1944

No. of Sets 2 Engine Brake Horse Power 2 x 48 M.N. as per Rule 2 x 10.5 Generator 120R 435 Total Capacity of Generators 60 Kilowatts.

Is Set intended for essential services Yes

Secr. letter of 25.1.49.

**OIL ENGINES, &c.**—Type of Engines 4RQ heavy oil engine 2 or 4 stroke cycle 4 Single or double acting SA

Maximum pressure in cylinders 750 lbs/in<sup>2</sup> Diameter of cylinders 4.5/8" (118 m/m) Length of stroke 5.7/8" (149 m/m) No. of cylinders 4 No. of cranks 4

Mean indicated pressure 114 lbs/in<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 5 1/2"

Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) - Revolutions per minute 1100

Flywheel dia. 25" Weight - Means of ignition Compression Kind of fuel used Heavy oil

Crank Shaft, dia. of journals as per Rule - as fitted 3.1/8" Crank pin dia. 2.7/8" Crank Webs Mid. length breadth 4 1/2" Mid. length thickness 1 1/4" shrunk Thickness parallel to axis - Thickness round eye-hole -

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

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 No Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged

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

Lubricating Oil Pumps, No. and size One, capacity not known.

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 5718 & 8363

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. 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. Two Total cubic capacity 1740 m<sup>3</sup> Internal diameter 626 m/m thickness 12 m/m

Seamless, lap welded or riveted longitudinal joint welded Material S.M. Steel Range of tensile strength 45.3 kg/mm<sup>2</sup> Working pressure by Rules 25 kg/cm<sup>2</sup>

**ELECTRIC GENERATORS:**—Type Drip proof

Pressure of supply 225 volts Full Load Current 133 Amperes Direct or Alternating Current D.C.

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 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 Yes and do the results comply with the requirements Yes

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

Details of driven machinery other than generator None

**PLANS:**—Are approved plans forwarded herewith for Shafting No. Secr. letter E Receivers No. 30.1.46 Separate Tanks No. 1.9.48

(If not, state date of approval) 25.1.49 None Armature shaft Drawing No. -

Have Torsional Vibration characteristics if applicable been approved (state date of approval)

**SPARE GEAR** Spare parts have been ordered, but have not yet been supplied.

The foregoing is a correct description,

Manufacturer.



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Lloyd's Register Foundation

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

28th October, 1948 - 20th July, 1949.

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Dates of Examination of principal parts—Cylinders 8.6 & 5.7.49 Covers 8.6 & 5.7.49 Pistons 8.6. & 5.7.49 Piston rods -

Connecting rods 8.6 & 5.7.49 Crank and Flywheel shafts 8.6 & 13.7.49 Intermediate shafts -

Crank shaft { Material As per plan: EN 12Q B 51 970:1947 Tensile strength -  
 Elongation - Identification Marks LLOYD'S 1291-7737 29.6.48 (forw. No marks (aft))

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers No. 1612 SJ & 529 SA

Is this machinery duplicate of a previous case - If so, state name of vessel -

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

These two generating sets, generally approved as per Secretary's letter "E" of 25.1.49, have been opened up, examined and placed in good condition. The cooling water spaces of cylinders and covers have been tested by water pressure to 4 kg/cm<sup>2</sup>. The dimensions of the crankshaft have been verified with the plan approved on the 21.1.49. The engines have been securely fitted and installed under my inspection and to my satisfaction, tested under full power conditions and found in order.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ON OR BELOW THE SPACE FOR COMMITTEE MINUTE.

The amount of Fee ... £Kr. 160:-- { When applied for 22/8 1949  
 Travelling Expenses (if any) £ : : { When received 19

Committee's Minute FRI, 21 OCT 1949  
 Assigned In unli see J.E.R. [Signature]

[Signature] Surveyor to Lloyd's Register of Shipping.



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