

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 3325.

Received at London Office. **19 APR 1954**

Date of writing Report 5/4 1954. When handed in at Local Office 8/4 1954. Port of M A L M Ö.

No. in Survey held at M A L M Ö. Date, First Survey 29/9-1953. Last Survey 31/3 1954. Number of Visits 32.

Reg. Book. 36109s on the Single Twin Triple Quadruple Screw vessel Motortanker "H A V J A R L" Tons { Gross 11,079 Net 6,408

Built at Malmö. By whom built Kockums Mek. Verkstads A.-B. Yard No. 366 When built 1954.

Owners A/S Havprins Port belonging to Oslo.

Oil Engines made at Malmö. By whom made Kockums Mek. Verkstads A.-B. Engine Contract No. 674/5 When made 1954.

Generators made at Västerås By whom made ASEA Generator Contract No. 3402016/7 When made 1953. KVA Kilowatts.

No. of Sets 2 Engine Brake Horse Power 2x375 M.N. as per Rule 150 Total Capacity of Generators 550

Is Set intended for essential services. Yes.

OIL ENGINES, &c.—Type of Engines Heavy oil engines, solid injection 2 or 4 stroke cycle 4 ✓ Single or double acting single ✓

Maximum pressure in cylinders 50 kg/cm² ✓ Diameter of cylinders 285 mm. ✓ Length of stroke 420 mm. ✓ No. of cylinders 6 ✓ No. of cranks 6

Mean indicated pressure 6.89 kg/cm² ✓ Firing order in cylinders 1-3-5-6-4-2 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 344 mm. ✓

Is there a bearing between each crank. Yes. Moment of inertia of flywheel (16 m² or Kg.-cm.²) 7650.10³ ✓ Revolutions per minute 375 ✓

Flywheel dia. 1654 mm. Weight 1700 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 --- Thickness parallel to axis --- shrunk Mid. length thickness --- Thickness round eyehole ---

Flywheel Shaft, diameter as per Rule --- Intermediate Shafts, diameter as per Rule --- General armature, moment of inertia (16 m² or Kg.-cm.²) 1740.10³ ✓

Are means provided to prevent racing of the engine when declutched. Yes. ✓ Means of lubrication Forced Kind of damper if fitted Not 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. 2x585 l/m. also connected to the main circulating system. Is the sea suction provided with an efficient strainer which can be cleared within the vessel. Yes. ✓

Lubricating Oil Pumps, No. and size 1 x 3.2 m³/h on each engine.

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 17094 ✓

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. Soda & hot water.

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 200 litres. Internal diameter 500 mm. ✓ thickness 13 mm. ✓

Seamless, lap welded or riveted longitudinal joint P.W. Material S.M. Steel Range of tensile strength 46.5 kg/mm² ✓ Working pressure by Rules 30 kg/cm² ✓

ELECTRIC GENERATORS:—Type ASEA GA 125

Pressure of supply 400 volts. Full Load Current 397 Amperes. Direct or Alternating Current Alternating current.

If alternating current system, state the periodicity 50 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 --- is an adjustable regulating resistance fitted in series with each shunt field ---

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 --- 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.

Details of driven machinery other than generator Compressor.

PLANS.—Are approved plans forwarded herewith for Shafting London 6.10.53. Receivers --- Separate Tanks ---

Have Torsional Vibration characteristics if applicable been approved. London 6.10.53. ✓ Armature shaft Drawing No. ASEA 382387

SPARE GEAR As per Rule supplied.

The foregoing is a correct description,

ROCKUMS
DANISKA VERKSTADS ABTIEDELSE

Manufacturer.



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008917-008924-0236

Dates of Survey while building { During progress of work in shops - - 29th September, 1953 - 7th January, 1954.
During erection on board vessel - - 4th January, 1954. - 31st March, 1954.
Total No. of visits 32.

Dates of Examination of principal parts—Cylinders 9-25/4-53. Covers 22/4-21/5-53 Pistons 21.10.53. Piston rods ---

Connecting rods 24/5-52 - 28/9-53. Crank and Flywheel shafts 15.5.53. Intermediate shafts ---

Crank shaft { Material S.M. Steel. Tensile strength 54,6 - 53,9 kg/cm²
Elongation 32 - 33 % Identification Marks Lloyd's Cot.No.3802/3 S.J.15.5.53

Flywheel shaft, Material --- Identification Marks ---

Identification marks on Air Receivers No. 2580 LLOYD'S TEST 60 kgs. W.P. 30 kgs. H.L. 2.7.53.

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 auxiliary engines have been built under special survey in accordance with the Rule and approved plans. The materials and workmanship are good and certificates in respect of crank shaft and air receiver are attached.

The torsional vibration characteristics of shafting installation are approved as per the Secretary's letter dated the 6th October, 1953, initialled E.

The machinery has been securely fitted in the vessel under my inspection and to my satisfaction, tested under full working power condition and found in order.

23.4.54

5m. 4.18.-T. (MADE AND PRINTED IN ENGLAND)

(The Surveyors are requested not to write on or below the space for Committee Minute.)

The amount of Fee ... £r. : 940:+

Travelling Expenses (if any) £ : :

When applied for 8/4 19 54.

When received 19

Committee's Minute

Assigned

TUESDAY 11 MAY 1954

See Rpt. 4 A

Boianov

Surveyor to Lloyd's Register of Shipping.



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