

Rpt. 4c.

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. FE-3020

22 NOV 1955

Date of writing Report 19 When handed in at Local Office OCT. 27 1955 Received at London Office Port of Kobe

No. in Survey held at Tamano, Japan Date, First Survey 17-12-1954 Last Survey 15-7-1955

Reg. Book. on the Single Screw vessel M.V. "HODAKASAN MARU" Number of Visits 33

Built at Tamano, Japan By whom built Mitsui Shipbuilding & Engineering Co., Ltd. Yard No. 593 When built July 1955

Owners Mitsui Senpaku K.K. Port belonging to Tokyo

Oil Engines made at Tamano, Japan By whom made Mitsui Shipbuilding & Engineering Co., Ltd. Engine No. 559, 560 When made July 1955

Generators made at Tokyo, Japan By whom made Tokyo Shibaura Elec. Co. Ltd. Generator No. 5455234, 5455235, 5455236 When made July 1955

No. of Sets 3 B.H.P. of each Set 350 M.N. of each Set as per Rule 70 Capacity of each Generator 230 Kilowatts

Is Set intended for essential services Yes

OIL ENGINES, &c.—Type of Engines Mitsui B&W DE525 MTBH40 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 55 kg/cm<sup>2</sup> Diameter of cylinders 245 mm Length of stroke 400 mm No. of cylinders 5 No. of cranks 5

Mean indicated pressure 9.6 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 315 mm

Is there a bearing between each crank Yes Moment of inertia of flywheel (16 m<sup>2</sup> kg.-cm.<sup>2</sup>) 5,850,000 balance wts. " " " 109,700 Revolutions per minute 425

Flywheel dia. 1350 mm Weight 2265 kg Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, Semi-built dia. of journals as per Rule 158.77 mm as fitted 170 mm Crank pin dia 170 mm Crank Webs Mid. length breadth 290 mm Thickness parallel to axis 90 mm Mid. length thickness 90 mm Thickness round eyebols 82.5 mm

Flywheel Shaft, diameter as per Rule - as fitted - Generator armature, moment of inertia (16 m<sup>2</sup> kg.-cm.<sup>2</sup>) 1,675,000

Are means provided to prevent racing of the engine 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 Logged

Cooling Water Pumps, No. and how driven 2-elec. motor Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Lubricating Oil Pumps, No. and size 1-Gear pump per each engine, Particulars: - gear breadth 75 mm, module 6, No. of teeth 15, R.P.M. 425, Capacity 5.5 m<sup>3</sup>/h

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

Scavenging Air Pumps or Blowers, No. - How driven -

AIR RECEIVERS:—Have they been made under Survey Yes State No. of Report or Certificate -

(other than main engines) State full details of safety devices 1-10 mm fusible plug

Can the internal surfaces of the receivers be examined and cleaned Yes

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 -

Starting Air Receivers, No. 1 Total cubic capacity 0.1 m<sup>3</sup> Internal diameter 420 mm thickness 11 mm

Seamless, lap welded or riveted longitudinal joint Welded Material O.H. Steel Range of tensile strength 42.6 - 53.3 kg/mm<sup>2</sup> Working pressure 25 kg/cm<sup>2</sup>

ELECTRIC GENERATORS:—Type D.C. compound winding ref. ventilated drip-proof open type

Pressure of supply 225 volts. Full Load Current 1022 Amperes. Direct or Alternating Current Direct

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 - 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 None

PLANS.—Are approved plans forwarded herewith for Shafting 25-1-1955 (Kobe) Receivers 28-12-1954 (Kobe) Separate Tanks 28-12-1954 (Kobe)

Have Torsional Vibration characteristics if applicable been approved 2-5-1955 Armature shaft Drawing No. 3D-3213

Has the spare gear required by the Rules been supplied 8-Exhaust valve, 5-air inlet valve, 2-starting air valve, 1 set & 2 valves for one engine, 2-relief valves, 5 sets-piston rings for one piston, 1-crank pin bearing, 3-gudgeon pin bush, 2-fuel pumps

The foregoing is a correct description,

Manufacturer.

MITSUI SHIPBUILDING & ENGINEERING CO., LTD. S. Tanaka Senior Managing Director.

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011433-011440-0259

Dates of Survey while building  
 During progress of work in shops - - 1954 Dec. 17, 21, 28  
 1955 Jan. 18, 25, 28, Feb. 8, 25, Mar. 4, 19, 23, 24, 25, 28, Apr. 6, 9, 15, 19, 22, 26, 28  
 May 2, 4, 6, 10, 20, 21, 24, Jun. 18, 25, 26, 28  
 During erection on board vessel - - - 1955 Jul. 15  
 Total No. of visits 33

Dates of Examination of principal parts—Cylinders 26-2-55 Covers - Pistons 22-4-55 Piston rods -  
 Connecting rods 22-4-55 Crank and Flywheel shafts 19-4-55, 22-4-55, 28-4-55  
 Journal O.H. Steel Eng. No. Intermediate shafts 560 561  
 Arm Electric furnace steel Journal 47.7-50.8 46.9-50.1 46.9-50.1  
 Crank shaft Material Journal 35-39% 33-39% 34-36% Tensile strength Arm 45.3-50.3 45.3-46.7 45.0-47.1  
 Elongation Arm 32-38 30-35 32-36 Identification Marks M-CK 378 M-CK 379 M-CK 380  
 JN B JN B JN B

Flywheel shaft, Material - Identification Marks -  
 Identification marks on Air Receivers No. AR-609 LLOYD'S TEST KOB W.T.P. 41 Kg/cm<sup>2</sup> W.P. 25 Kg/cm<sup>2</sup> JN IR 26-4-55

Is this machinery duplicate of a previous case. Yes If so, state name of vessel M.V. HAGUROSAN MARU

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

The Electric generator of this vessel has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters.  
 The workmanship and materials are sound and good.  
 The Electric generators have been examined under working condition during shop and comprehensive sea trial and found satisfactory.

4m. 552.-T. (MADE AND PRINTED IN ENGLAND)  
 (The Surveyors are requested not to write on or below the space for Committee Minutes.)

The amount of Fee ... £ 150,000  
 Travelling Expenses (if any) £ Sec Rpt. :/

When applied for SEP. 12 1955 19  
 When received 19

Shunji J. Konohara  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY 25 NOV 1955  
 Assigned Sec Rpt. 4 b.

