

## REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. FE-388

Date of writing Report 19 When handed in at Local Office AUG. 29, 1956 Received at London Office 10 SEP 1956  
 Port of K O B E  
 No. in Survey held at Tamano, Japan Date, First Survey 15th Nov., 1955 Last Survey 7th June 1956  
 Reg. Book. Single on the Plate Double Triple Quadruple Screw vessel M.V. "MIKAGESAN MARU" Number of Visits 49  
 Tons { Gross 7200.05 Net 4019.43  
 Built at Tamano, Japan By whom built Mitsui S.B. & E. Co., Ltd. Yard No. 609 When built 1956-6  
 Owners Mitsui Steamship Co., Ltd. Port belonging to Tokyo  
 Oil Engines made at Tamano, Japan By whom made Mitsui S.B. & E. Co., Ltd. Engine No. 608, 609, 610 When made 1956-6  
 Generators made at Tokyo, Japan By whom made Tokyo Shibaura Elect. Co. Ltd. Generator No. 5517310  
5517311 When made 1956-6  
5517312  
 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 525 MTBH-40 2 or 4 stroke cycle 4 Single or double acting Single  
 Maximum pressure in cylinders 55 kg/cm<sup>2</sup> Diameter of cylinders 245mm Length of stroke 400mm 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) 315mm  
 Is there a bearing between each crank Yes Moment of inertia of flywheel (100000 Kg.-cm.<sup>2</sup>) 5,850,000 Revolutions per minute 425  
 Flywheel dia. 1350mm Weight 2265kgs Means of ignition Compression Kind of fuel used Diesel Oil  
 Crank Shaft, Semi-built dia. of journals 158.77mm as per Rule 170mm Crank pin dia. 170mm Crank Webs Mid. length breadth 290mm Thickness parallel to axis 90mm  
Mid. length thickness 90mm Thickness round eye hole 82.5mm  
 Flywheel Shaft, diameter as per Rule Generator armature, moment of inertia (100000 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 lagged  
 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 eng. Particulars of gear, breadth 75mm, module 6, capacity 5.5 m<sup>3</sup>/h, No. of teeth 15, R.P.M. 425.

Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -  
 Scavenging Air Pumps or Blowers, No. Turbo blower 1 set per 1 engine Aux. engine exhaust gas  
 AIR RECEIVERS: Have they been made under Survey Yes State No. of Report or Certificate 27/9/56  
 (other than main engines) State full details of safety devices 1-10mm 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 420mm thickness 11mm  
 Seamless, lap welded or riveted longitudinal joint Welded Material O.H. Steel Range of tensile strength 44.9-45.7 kg/cm<sup>2</sup> Working pressure 25 kg/cm<sup>2</sup>

ELECTRIC GENERATORS: Type D.C. compound winding self 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 8-11-1955 Receivers 25-12-54 Separate Tanks 25-12-54  
 (If not, state date of approval) Have Torsional Vibration characteristics if applicable been approved (23-1-56) 6/2/56 Armature shaft Drawing No. 30-3213  
 (State date of approval and name of previous duplicate case, if any) Has the spare gear required by the Rules been supplied 8-Exhaust valves, 5-Air inlet valves, 2-Starting air valves, 5-Fuel valves, 2-Relief valves, 5 sets-Piston rings, 2-Crank pin bearings, 2-Gudgeon pin bushes, 2-Fuel pumps, 15 sets - Fuel pipes, 1-Cylinder, 1-Piston, 3-Indicator valves.

The foregoing is a correct description,

MITSUI SHIPBUILDING &amp; ENGINEERING CO., LTD., TAMANO WORKS.

Manufacturer.

T. Arano for S. Tanaka  
Senior Managing Director.



Dates of Survey while building  
During progress of work in shops - - 1955: Oct. 15, 18, 22, 28, 30, Dec. 2, 6, 9, 13, 16, 27  
1956: Jan. 6, 10, 13, 16, 17, 18, 23, 25, 26, 27, 31, Feb. 1, 3, 6, 9, 10, 13, 14, 21, 23, 24, 27, March 5, 6, 9, 12, April 9, 23, 25.  
During erection on board vessel - - 1955: Dec. 16, 1956: Jan. 25, Feb. 1, 3, 23, 24, 27, May 28 June 7.  
Total No. of visits 49

Dates of Examination of principal parts - Cylinders 18-1-56 Covers - Pistons 9-2-56 Piston rods -  
Connecting rods 3-2-56 Crank and Flywheel shafts 6-2-56 Eng. No. 608, 609: 610  
Arm: Electric furnace Steel (C.S.) Eng. No. 608 609 610  
Journal: Open Hearth Steel (F.S.) Tensile strength Arm 48.6-53.4 47.6-51.8 47.7  
Crank shaft Material Journal: Open Hearth Steel (F.S.) Journal 45.6-48.9 45.6-48.9 45.6  
Elongation Arm 29-35% 31-34% 29-34% Identification Marks MCK-397 398 399  
Journal 33-37% 33-37% 33-37% RS LR RS LR RS  
Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers No. AR 734 LLOYD'S TEST KOB W.T.P. 41kg/cm<sup>2</sup> W.P. 25kg/cm<sup>2</sup> RS LR 23-2-56

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

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

The Electric Generators of this vessel have been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.

The workmanship and material are sound and good.

The Electric generators have been examined under working condition during shop and comprehensive sea trial and found satisfactory.

✓ Crank case explosion relief devices are fitted.

The amount of Fee ... £ 150,000 When applied for AUG. 21, 1956

Travelling Expenses (if any) £ See Rpt. 1 When received 19

Committee's Minute TUESDAY 16 OCT 1956

Assigned See Rpt. 4 C.

R.D. Sutherland & J. Honohura  
Surveyors to Lloyd's Register of Shipping.

