

## REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

No. 450

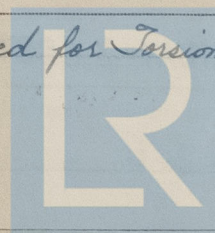
Received at London Office

13 SEP 1955

Date of writing Report 14th June 1955 When handed in at Local Office 19 Port of ShimonosekiNo. in Survey held at Nagasaki, Japan Date, First Survey 20th December, 1954 Last Survey 6th June 1955  
Reg. Book. Number of Visits 48on the Single Twin Triple Quadruple Screw vessel M.T. "KOCHU MARU" carrying vegetable oil in deep tanks in way of tunnel. Tons Gross 9197.25 Net 5372.24Built at Nagasaki, Japan By whom built Mitsubishi Zosen K. K. Yard No. 1445 When built 6mo 1955Owners Daido Kaikan K. K. Port belonging to KobeOil Engines made at Nagasaki, Japan By whom made Mitsubishi Zosen K. K. Engine No. 289 290 291 When made 2mo 1955Generators made at Nagasaki, Japan By whom made Mitsubishi Electric Mfg. Co., Ltd. Generator No. 531924 531925 531926 When made 1mo 1955No. of Sets 3 B.H.P. of each Set 350 M.N. of each Set as per Rule - Capacity of each Generator 300 K.T.A. KilowattsIs Set intended for essential services YesOIL ENGINES, &c.—Type of Engines Mitsubishi 5UT 22/40 type 3 or 4 stroke cycle 2 Single or double acting singleMaximum pressure in cylinders 5.5 kg/cm<sup>2</sup> Diameter of cylinders 220 mm Length of stroke 400 mm No. of cylinders 5 No. of cranks 5Mean indicated pressure 7.0 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 286 mmIs there a bearing between each crank Yes Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 2.085 x 10<sup>7</sup> Revolutions per minute 360Flywheel dia. 1,450 mm Weight 1,551 Kgs Means of ignition Compression Kind of fuel used Diesel oilCrank Shaft, Solid forged Semi-built All-built dia. of journals as per Rule as approved as fitted 1.50 mm. Crank pin dia. 150 mm Crank Webs Mid. length breadth 200 mm Thickness parallel to axis - Mid. length thickness 82.5 mm Thickness round eye-holes -Flywheel Shaft, diameter as per Rule as fitted Generator armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) Rotor 1.239 x 10<sup>7</sup>, Armature 4.14 x 10<sup>5</sup>, Slip ring 4.35 x 10<sup>4</sup>Are means provided to prevent racing of the engine Yes Means of lubrication Forced Kind of damper if fitted not fittedAre the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material BothCooling Water Pumps, No. and how driven 1 for each engine, Is the sea suction provided with an efficient strainer which can be cleared within the vesselLubricating Oil Pumps, No. and size 1 for each engine, plunger type, 100 mm bore, 60 mm stroke, 10.1 m<sup>3</sup>/hr capacityStarting Air Compressors, No. 2 No. of stages 3 Diameters HP 95, IP 310-260, LP 310-95 Stroke 200 mm Driven by Engines through magnetic clutchesScavenging Air Pumps or Blowers, No. 1 for each engine, Root Blower type How driven Engine gearedAIR RECEIVERS:—Have they been made under Survey Yes State No. of Report or Certificate Nag. M-11261(other than main engines) State full details of safety devices 1-10 mm dia. single spring safety valve fittedCan the internal surfaces of the receivers be examined and cleaned YesIs there a drain arrangement fitted at the lowest part of each receiver YesHigh 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 0.5 m<sup>3</sup> Internal diameter 696 mm thickness 16 mmSeamless, lap welded or riveted longitudinal joint Riveted Material Boiler steel Range of tensile strength 533-536 kg/mm<sup>2</sup> Working pressure 30 kg/cm<sup>2</sup>ELECTRIC GENERATORS:—Type Semi-enclosed drip proofPressure of supply 450 volts Full Load Current 385 Amperes. Direct or Alternating Current Alternating CurrentIf alternating current system, state the periodicity 60 Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrownon 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 spacedor shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule YesIf 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 YesDetails of driven machinery other than generator Port aft outboard & inboard engines driving main starting air compressors respectivelyPLANS.—Are approved plans forwarded herewith for Shafting 12.1.55 Receivers 12.1.55 Separate Tanks 8.12.54(If not, state date of approval) Have Torsional Vibration characteristics if applicable been approved 11.4.55 for a service speed of 360 RPM Armature shaft Drawing No. C 234046(State date of approval and name of previous duplicate case, if any) Has the spare gear required by the Rules been supplied YesThe particulars of the installation as fitted are as approved for Torsional Vibration Characteristics.  
The foregoing is a correct description,

L. Maki-shita

Manufacturer.

NAGASAKI WORKS  
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.Lloyd's Register  
Foundation

010 791-010 796-0070



Dates of Survey while building  
During progress of work in shops - 1954. Dec. 20; 1955 Jan. 14, 17, 18, 19, 21, 22, 24, 25, 26, 27, 28, 29, 31, Feb. 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14, 15, 17, 19, 21, 22, 23, 28, March 2, 11, 12, 22.  
During erection on board vessel - 1955 March 25, April 14, 18, 19, May 5, 14, 23, 27, June 3, 6.  
Total No. of visits 48

Dates of Examination of principal parts - Cylinders 21. 23. 2. 55 Covers 21. 23. 2. 55 Pistons 21. 23. 2. 55 Piston rods -

Connecting rods 21. 23. 2. 55 Crank and Flywheel shafts 21. 23. 2. 55 Intermediate shafts -

Crank shaft Material Carbon steel forgings Tensile strength Eng. No. 289 290 291. 36.7, 34.9, 37.12, 35.17, 36.6, 37.38, 36.65, 36.58  
Nag. No. 193 194 192.  
Elongation 26.0, 30.0, 30.33.5, 30.0, 30.22, 30.7% Identification Marks MO 25.12.54, MO 22.1.55, MO 26.1.55

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers M-29 NO. 398 LLOYD'S TEST NAG. 45 KG. W.P. 30 KG. AM R 26.2.55.

Position of sets: - Port fwd. Eng. No. 291-Generator No. 531926; Port aft. outbrd. Eng. No. 289-Generator No. 531924-Compressor No. T 31/20-3; Port aft. inbrd. Eng. No. 290-Generator No. 531925-Compressor No. T 31/20-4.

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.)

The Auxiliary Electrical Generating Machinery of this ship has been made under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters.

The materials and workmanship are good.

The auxiliary machinery was tested under working conditions in the shop and after installation on board and found satisfactory.

The explosion relief devices have been fitted to the crank cases of the engines.

The amount of Fee ... £150,000 :

When applied for 19

Travelling Expenses (if any) £ :

When received 19

5 AUG 1955  
LOCALLY

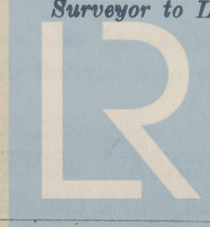
Committee's Minute

FRIDAY 21 OCT 1955

Assigned

See Rpt. 46.

Surveyor to Lloyd's Register of Shipping.



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