

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 652-D

Date of writing Report 12-3-1952 When handed in at Local Office 12-3-1952 Port of YOKOHAMA Received at London Office 13 JUN 1952

No. in Reg. Book. Survey held at KOGA AND YOKOHAMA, JAPAN Date, First Survey 27-7-51 Last Survey 15-2-1952  
 Number of Visits 9

Single on the Twin Screw vessel M.V. "TOKYO MARU" Tons { Gross 6573.83  
 Triple Net 3765.80  
 Quadruple

Built at YOKOHAMA, JAPAN By whom built YOKOHAMA SHIPYARD AND ENGINE WORKS Yard No. 5781 When built 2-1952  
EAST JAPAN HEAVY INDUSTRIES, LTD.

Owners TOKYO SENPAKU K. K. TOKYO Port belonging to TOKYO

Oil Engines made at KOGA, JAPAN By whom made KOGA ENGINEERING WORKS ENGINE Contract No. 41324 When made 10-1951  
EAST JAPAN HEAVY INDUSTRIES, LTD.

Generators made at NAGASAKI, JAPAN By whom made MITSUBISHI ELECTRIC MFG. CO., LTD. MACHINE Contract No. 318483 When made 9-1951

No. of Sets 1 Engine Brake Horse Power 65 M.N. as per Rule 13 Total Capacity of Generators 40 Kilowatts.

Is Set intended for essential services YES

## OIL ENGINES, &c.—Type of Engines 4S.C.S.A. SOLID INJECTION, PRE-COMBUSTION CHAMBER 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 50 kg/cm<sup>2</sup> Diameter of cylinders 180 mm Length of stroke 220 mm No. of cylinders 3 No. of cranks 3  
 Mean indicated pressure 7.73 kg/cm<sup>2</sup> Firing order in cylinders 1-3-2 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 227 mm

Is there a bearing between each crank YES Moment of inertia of flywheel (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 458.4 kg.-m<sup>2</sup> Revolutions per minute 600  
 Flywheel dia 1000 mm Weight 680 mm Means of ignition COMPRESSION Kind of fuel used DIESEL OIL

Crank Shaft, dia. of journals as per Rule 102.8 mm Crank pin dia 110 mm Crank Webs Mid. length breadth 160 mm Thickness parallel to axis -  
 as fitted 115 mm Mid. length thickness 59 mm Thickness round eyehole -

Flywheel Shaft, diameter as per Rule - Intermediate Shafts, diameter as per Rule - General armature, moment of inertia (16 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 19 kg.-m<sup>2</sup>  
 as fitted - as fitted -

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 YES Are the exhaust pipes and silencers water cooled or lagged with non-conducting material WATER COOLED

Cooling Water Pumps, No. 1 Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES  
 Lubricating Oil Pumps, No. and size 1, DELIVERY BORE 16.4 mm DIA.

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

## AIR RECEIVERS:—Have they been made under Survey YES State No. of Report or Certificate Y2453

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. - 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. 1 Total cubic capacity 100 LITRE Internal diameter 400 mm thickness 11 mm  
 Seamless, lap welded or riveted longitudinal joint DOUBLE BUTT. Material D.H. STEEL Range of tensile strength 31.2 % Working pressure by Rules 31.9 kg/cm<sup>2</sup>

## ELECTRIC GENERATORS:—Type DRIP PROOF, SELF VENTILATED, D.C. COMPOUND WOUND.

Pressure of supply 230/115 volts. Full Load Current 174 Amperes. Direct or Alternating Current DIRECT  
 Alternating current system, state the periodicity - Has the Automatic Governor been tested and found as per Rule when full load is suddenly thrown 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 -  
 Are the generators 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 - 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 -

Are there any other driven machinery other than generator -

APPROVED PLANS.—Are approved plans forwarded herewith for Shafting 4-4-51 Receivers 7-8-51 (KOBE) Separate Tanks 30-10-51 (KOBE)  
 (If not, state date of approval) SAME AS KOBE SHIPYARD SHIP NO. 838, 839.

Torsional Vibration characteristics if applicable been approved - Armature shaft Drawing No. -  
 (state date of approval)

ARE GEAR 1-CYLINDER LINER, 1-CYL. COVER, 4SET OF CYL. COVER BOLTS & NUTS, 1-PISTON, 1-NOZZLE HOLDER ASSEMBLY.

NOZZLE TIPS, 3- EXHAUST VALVE ASSEMBLY, 1-INLET VALVE ASSEMBLY, 2- STARTING VALVES, 1- CHARTE VALVE, 1- SAFETY VALVE WITH INDICATOR COCK.

SEAL RINGS FOR 2 CYLINDERS, 1-FUEL INJECTION PUMP, 3-FUEL INJECTION PIPES, MAIN BEARING WITH BOLTS & NUTS EACH ONE SET,

CRANK PIN WITH BOLTS & NUTS, 1-PISTON PIN BRASS, PRESSURE GAUGE, FILTER ELEMENTS FOR F.O. & L.O. STRAINERS.

The foregoing is a correct description,

*Matsumi*

Manufacturer.



Lloyd's Register Foundation

Dates of Survey while building  
 During progress of work in shops-- } 1951:- JUNE 27, AUG. 3, SEPT. 21, OCT. 25, 26  
 During erection on board vessel-- } 1952:- JAN. 31, FEB. 2, 5, 15.  
 Total No. of visits 9.

Dates of Examination of principal parts—Cylinders 15-12-50 Covers 3-8-51 Pistons 26-10-51 Piston rods —  
 Connecting rods 26-10-51 Crank and Flywheel shafts 26-10-51 Intermediate shafts —  
 Crank shaft: Material ELECTRIC FURNACE STEEL FORGING Tensile strength 37.8 7/10"  
 Elongation 31.5 % Identification Marks Y2392 KM  
 Flywheel shaft, Material — Identification Marks —  
 Identification marks on Air Receivers Y2451 RT  
 Y2452 RT  
 Y2453 YK  
 Y2454 YK

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

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)  
 THIS GENERATOR SET HAS BEEN CONSTRUCTED UNDER THE SUPERVISION OF THE SOCIETY'S SURVEYORS IN ACCORDANCE WITH THE RULES AND APPROVED PLANS. THE QUALITY OF THE QUALITY OF AND MATERIALS HAVE BEEN FOUND SATISFACTORY. THIS GENERATOR SET HAS BEEN EXAMINED UNDER FULL POWER WORKING CONDITION IN THE SHOP AND FOUND SATISFACTORY. THIS MACHINERY HAS BEEN SATISFACTORILY INSTALLED IN THE VESSEL IN ACCORDANCE WITH THE RULES, TESTED UNDER WORKING CONDITIONS AND FOUND SATISFACTORY. IT IS SUBMITTED THAT THE MACHINERY OF THIS VESSEL IS ELIGIBLE TO BE CLASSED WITH THIS SOCIETY WITH THE NOTATION OF + LMC 2.52

CC 5. 51. KOBE  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)  
 14.652

The amount of Fee ... £ 10,000.- :  
 Travelling Expenses (if any) £ : :  
 When applied for ..... 19  
 When received ..... 19

Surveyor to Lloyd's Register of Shipping

FRI. 27 JUN 1952

Assigned *Sir F.E. Welch, apt.*

