

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 799

Received at London Office **Kobe**

Date of writing Report **1 March 1952** When handed in at Local Office **19** Port of **Kobe**

Survey held at **Aioi Japan.** Date, First Survey **30 - 4 - 1951** Last Survey **13 - 2 - 1952**
 Number of Visits **19**

on the **Single** Screw vessel **M/V "TAIEI - MARU"** Tons { Gross **11867.82**
 Net **8891.61**

At **Aioi Japan.** By whom built **THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD.** Yard No. **467** When built **Feb. 1952.**

Port belonging to **Kobe**

Engines made at **Aioi Japan.** By whom made **THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD.** Contract No. **112, 113** When made **Nov. 1951.**

Generators made at **Tokyo Japan.** By whom made **TOKYO SHIBAURA ELECTRIC CO., LTD.** Contract No. **5110344** When made **Oct. 1951.**

Number of Sets **2** Engine Brake Horse Power **360** M.N. as per Rule **90 x 2** Total Capacity of Generators **480** Kilowatts.

Set intended for essential services **Yes**

OIL ENGINES, &c.—Type of Engines **Solid injection trunk piston Diesel** or 4 stroke cycle **4** Single or double acting **Single**

Maximum pressure in cylinders **56 Kg/cm²** Diameter of cylinders **290 mm.** Length of stroke **360 mm.** No. of cylinders **5** No. of cranks **5**

Mean indicated pressure **6.57 kg/cm²** Firing order in cylinders **1-3-5-4-2** Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **338 mm.**

Is there a bearing between each crank **Yes** Moment of inertia of flywheel (**cm²** or Kg.-cm.²) **35100000** Revolutions per minute **500**

Flywheel dia **1500 mm.** Weight **2670 Kg** Means of ignition **Compression** Kind of fuel used **Diesel oil**

Crank Shaft, dia. of journals as per Rule **159.894 mm.** as fitted **200 mm.** Crank pin dia **185 mm.** Crank Webs Mid. length breadth **285 mm.** Thickness parallel to axis **-**
 Mid. length thickness **92 mm.** Thickness round eyehole **-**

Flywheel Shaft, diameter as per Rule **-** as fitted **-** Intermediate Shafts, diameter as per Rule **-** as fitted **-** General armature, moment of inertia (16 m² or Kg.-cm.²) **6150000**

Are the means provided to prevent racing of the engine **when detached 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 **Yes**

Cooling Water Pumps, No. **One Centrifugal pump** for each set Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**

Lubricating Oil Pumps, No. and size **One gear pump for each set M=6** No. of Teeth = **10** Breadth of teeth = **90 mm.** r.p.m. = **1120**

Air Compressors, No. **2** No. of stages **2** Diameters **190; 190-170 mm.** Stroke **150 mm.** Driven by **Electric Motor**

Scavenging Air Pumps, No. **-** Diameter **-** Stroke **-** Driven by **-**

AIR RECEIVERS:—Have they been made under Survey **Yes** State No. of Report or Certificate **M 5384**

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 **Peep hole**

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 **300 lit.** Internal diameter **550 mm** thickness **16 mm**

Seamless, lap welded or riveted longitudinal joint **Riveted** Material **O.H. Steel** Range of tensile strength **29.9T/σ'** Working pressure by Rules **473.767 lb/in²**

ELECTRIC GENERATORS:—Type **Open drip proof**

Pressure of supply **230** volts. Full Load Current **1043** Amperes. Direct or Alternating Current **Direct Current**

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 **-**

Are they 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 **-**

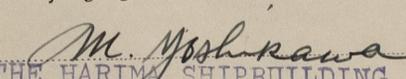
PLANS.—Are approved plans forwarded herewith for Shafting **19-10-51** Receivers **8-8-51 Kobe** Separate Tanks **1-8-51**

(If not, state date of approval)

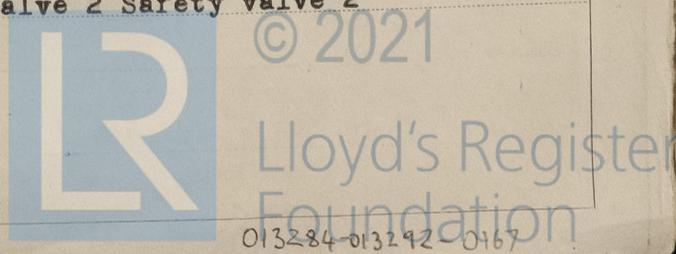
Have Torsional Vibration characteristics if applicable been approved **19-10-51** Armature shaft Drawing No. **K 2161293**

(state date of approval)

SPARE GEAR Cylinder liner **2** set, Piston ring (No.3-5) **15** Piston ring (No.1-2) **10** Upper oil scraper ring **2**, Lower oil scraper ring **2**. Main bearing brass **2**. Bolt & Nut for main bearing **4**, Bolt & nut for crank pin bearing **4**, Exhaust valve (complete) **4**. Fuel valve (complete) **4**. Indicator valve **2** moving parts & spring for fuel pump **9** set. Fuel in injection pipe **10** set. Fuel body **1**. Ball bearing for governor **2**, All sorts of spring each **2**. Cylinder cover (complete) **1** set piston (complete) **1** set. Fuel cam & Exhaust cam **1** set. piston pin **2** stud & nut for Cylinder cover **16** piston pin brass **2** crank pin bearing **2**. Starting valve **2** suction valve **2** Safety valve **2** Nozzle with Needle for Fuel valve **5**.

The foregoing is a correct description,

 THE HARIMA SHIPBUILDING AND ENGINEERING COMPANY, LTD.

Manufacturer.



Dates of Survey while building
 (During progress of work in shops--)
 1951 April 30 June 9, 22, 29 July 13, Aug. 1, 7, 8, 15, 18, 21, 30 Sept. 6, 15, Nov. 26
 (During erection on board vessel---)
 1952 Jan. 15, 24, Feb. 6, 13.
 Total No. of visits 19

Dates of Examination of principal parts—Cylinders 15-8-51 Covers 18-8-51 Pistons 7-8-51 Piston rods -

Connecting rods 7-8-51 Crank and Flywheel shafts 1-8-51, 13-7-51 Intermediate shafts -

Crank shaft: Material O.H. steel Tensile strength 35.9-35.9 T/□" 36.3-36.3 T/□"
 Elongation 29-30% 30-30% Identification Marks K-OK 189; K-OK 211
 (E.No. 112) 113 (E.No. 112) 113

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers No. AR 215 LLOYD'S TEST W.T.P. 45 Kg/cm2 W.P. 30 Kg/cm2 JN B 15-9-51

Is this machinery duplicate of a previous case Yes If so, state name of vessel M/V "NISSYO-MARU"

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

The 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.

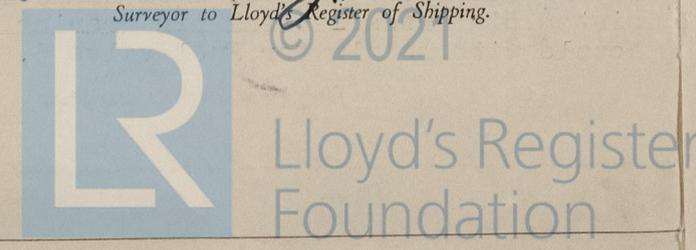
The Generators have been examined under working condition during comprehensive deck and sea trials and found satisfactory.

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

The amount of Fee ... \$ 90,000 : When applied for 19
 Travelling Expenses (if any) £ : : When received 19

TUES. 12 AUG 1952

Shunichi Hiroshima
 Surveyor to Lloyd's Register of Shipping.



Committee's Minute

Assigned See F.E. mch. rpt.