

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

Received at London Office **1 - MAY 1952**

Date of writing Report 28th Jan 1952 When handed in at Local Office 19 Port of Kobe

No. in Reg. Book 7 Survey held at Aioi Japan Date, First Survey 22th January 1951 Last Survey 20th December 1951 Number of Visits 30

Single on the Twin Triple Quadruple } Screw vessel M/V "NISSYO-MARU" Tons { Gross 11865.69 Net 8932.01

Built at Aioi Japan By whom built Harima Shipbuilding & Engineering Co. Ltd Yard No. 466 When built Dec. 1951

Owners Idemitsu Kosan K.K. Port belonging to Tokyo

Oil Engines made at Aioi Japan By whom made Harima Shipbuilding & Engineering Co. Ltd Contract No. 108.109 When made Sept. 1951

Generators made at Tokyo Japan By whom made Tokyo Shibaura Electric Co. Ltd Contract No. 5110346 When made Aug. 1951

No. of Sets 2 Engine Brake Horse Power 360 M.N. as per Rule 90 x 2 Total Capacity of Generators 480 Kilowatts.

Is Set intended for essential services yes

OIL ENGINES, &c.—Type of Engines Solid injection trunk piston Diesel, 2 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 (16 m² or Kg.-cm.²) 35/50000 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 shrunk 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 means provided to prevent racing of the engine when ~~deactivated~~ 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 M5067

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 l Internal diameter 550 mm thickness 16 mm

Seamless, lap welded or riveted longitudinal joint Riveted Material O. H. steel Range of tensile strength 29.9% Working pressure by Rules 473.767

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 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 —

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

Have Torsional Vibration characteristics if applicable been approved 19-10-51 Armature shaft Drawing No. K-2/6/293

SPARE GEAR of liner, liner 2 set, Piston ring (No.3-5) 9, Piston ring (No.1-2) 6, Upper oil scraper ring 3, Lower oil scraper ring 3, Main bearing brass 2, Main bearing cap 2, Bolt & nut for main bearing 4, Bolt & nut for crank pin bearing 4, Exhaust valve (Complete) 2, Fuel valve (Complete) 2, Indicator valve 3, Moving parts & spring for fuel pump 8 set, Fuel injection pipe 10 set, Fuel pump body 1, Ball bearing for governor 2, All sorts of spring each 2, Cylinder cover (Complete) 1 set, piston (Complete) 1 set, Fuel cam, Suction cam & Exhaust cam 1 set (except the spare gears given by rule's)

The foregoing is a correct description,

M. Yoshizawa Manufacturer.
THE HARIMA SHIPBUILDING AND ENGINEERING COMPANY, LTD.



C10300-010208-0115

Dates of Survey while building
 During progress of work in shops - } 1951 JAN. 22. 29 FEB. 19. MARCH 7. 29 APRIL 12. 21 MAY 30. JUNE 4. 9. 13. 22. 29 JULY 4. 8. 11. 16. 25 AUG 1. 4. SEPT 10. 11
 During erection on board vessel - } 1951 NOV. 20. 27. 29 DEC. 8. 11. 14. 19. 20
 Total No. of visits 30

Dates of Examination of principal parts—Cylinders 8-7-51 Covers 11-7-51 Pistons 11-7-51 Piston rods -

Connecting rods 13-6-51 Crank and Flywheel shafts 4-6-51 ; 22-6-51 Intermediate shafts -

Crank shaft: Material O. H. steel Tensile strength 36.6 - 36.6 $\frac{1}{16}$; 34.7 - 34.3 $\frac{1}{16}$
 Eng. No. 108 ; 109 Identification Marks LLOYD'S (ENG. NO) LLOYD'S (Eng. NO)
 Elongation 29-28% ; 30-31% Identification Marks NO, K-CK 194 (108) NO, K-CK 202 (109)

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers NO, AR 212 LLOYD'S TEST W.T.P - 45 Kg/cm² W.P - 30 Kg/cm² KLB 14-8-51

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 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.

The amount of Fee ... £ 7160.000 : : When applied for 19
 Travelling Expenses (if any) £ : : When received 19

A. Sumi Monohara
 Surveyor to Lloyd's Register of Shipping.

TUES. 10 JUN 1952

Committee's Minute Assigned *Su F.E. Welch. rpt.*



Lloyd's Register Foundation

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