

FOR LONDON

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 1234
KOB-2076

Received at London Office

19 MAY 1954

25th NOV. 1953

Port of Yokohama 7 KOBE
 Date, First Survey 25-12-53 Last Survey 31-1-54 (KOBE)
 Number of Visits 15

When handed in at Local Office 19
 Survey held at Shimizu, MAIZURU
 on the Single Screw vessel M.V. "NAGASHIMAMARU"
 at MAIZURU By whom built IINO SHIPBUILDING & ENGINEERING CO., LTD. Yard No. 5 When built 1954 2 Mo.

Engines made at Shimizu Japan By whom made Ito Engineering Co., Ltd. Contract No. 4115 When made 10-53
 Generators made at Nagasaki Japan By whom made Mitsubishi Electric Mfg. Co., Ltd. Contract No. 400186 When made 9-53
 of Sets 2 Engine Brake Horse Power 450 x 2 M.N. as per Rule 90 x 2 Total Capacity of Generators 300 x 2 Kilowatts.
 Set intended for essential services YES

OIL ENGINES, &c.—Type of Engines 4 SCSA Solid Injection Trunk Piston 2 or 4 stroke cycle 4 ✓ Single or double acting Single ✓
 Maximum pressure in cylinders 50 kg/cm² Diameter of cylinders 310 mm Length of stroke 430 mm No. of cylinders 6 ✓ No. of cranks 6
 Mean indicated pressure 6.6 kg/cm² Firing order in cylinders 1-3-5-6-4-2 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 376 mm
 Is there a bearing between each crank yes Moment of inertia of flywheel ($\pm 6 \text{ m}^2$ or Kg-cm.²) 36.4 x 10⁶ Revolutions per minute 380 ✓
 Crankshaft dia. 1600 mm Weight 2170 kg Means of ignition Compression Kind of fuel used Diesel oil
 Crank Shaft, dia. of journals as per Rule 176.2 mm Crank pin dia. 200 ✓ Crank Webs Mid. length breadth 290 mm Thickness parallel to axis -
 as fitted 210 ✓ Crank pin dia. 200 ✓ Mid. length thickness 100 mm Thickness round eyehole -
 Flywheel Shaft, diameter as per Rule 176.2 mm Intermediate Shafts, diameter as per Rule 176.2 mm General armature, moment of inertia ($\pm 6 \text{ m}^2$ or Kg-cm.²)
 as fitted approved 200 mm ✓

Are the 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 each Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES
 Lubricating Oil Pumps, No. and size 1 each M 4 N 16 P.C.D. 67.29 B 60 mm R.P.M. 641 1-95 x 310-26 x 310-95 mm 1-200 mm 1-OIL E. ELECT. G.
 Air Compressors, No. 2 No. of stages 1-3 stage, 1-2 stage Diameters 1-85 x 220-85 mm Stroke 1-100 mm Driven by 1-MOTOR

Scavenging Air Pumps, No. 2 Diameter 100 mm Stroke 100 mm Driven by 1-MOTOR
AIR RECEIVERS:—Have they been made under Survey YES ✓ State No. of ~~Report~~ Certificate AR-17298 "529"
 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 -
 Is there a drain arrangement fitted at the lowest part of each receiver YES ✓

High Pressure Air Receivers, No. 2 Cubic capacity of each 2 x 6 M³ Internal diameter 1,350 mm thickness 33 mm
 Seamless, lap welded or riveted longitudinal joint WELDED Material BOILER PLATE Range of tensile strength 43-45 kg/mm² Working pressure by Rules 30.15 kg/cm²
 Starting Air Receivers, No. 2 Total cubic capacity 2 x 6 M³ Internal diameter 1,350 mm thickness E. PLATE 33 mm

ELECTRIC GENERATORS:—Type Drip Proof Self Ventilated
 Pressure of supply 230 volts. Full Load Current 1304.5 Amperes. Direct or Alternating Current D. C.
 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 yes
 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 1 x 240 M³/H x 27 kg/cm² x 380 r.p.m. AIR COMP. COUPLED WITH MAGNET CLUTCH TO START IN W/D ELECT. G. E
PLANS.—Are approved plans forwarded herewith for Shafting 10-8-53 Receivers 23-6-53 Separate Tanks 10-10-53
 (If not, state date of approval)
 Have Torsional Vibration characteristics if applicable been approved 18-9-53 Armature shaft Drawing No. G-339090
 (state date of approval)

SPARE GEAR Cylinder liner - 2, cylinder head - 1, piston - 2, fuel valve - 6 sets, fuel valve nozzle tip - 6
 suction valve - 6, exhaust valve - 6, starting air valve - 2, cylinder relief valve - 2, piston ring - 5 cyl
 fuel pump - 2, fuel injection pipe with union - 6, main bearing brass - 7, crank pin metal with bolts & nuts - 2
 piston pin metal - 6, coupling bolts & nuts for crank shaft - 8, cam shaft gear - 1 each size, L.O. pump gear - 1
 governor gear - 1 etc.

The foregoing is a correct description,
 Factory manager Sho. Shizatori Manufacturer.
Ito Engineering Co., LTD.



Dates of Survey while building
 During progress of work in shops--
 1953: Sept. 8, 15, 26, Oct. 3, 10, 17, 28, 29, Nov. 5, 12
 During erection on board vessel--
 1953: Dec 25, 1954 JAN. 19, 20, 29, 31
 Total No. of visits 10 (Yokohama) 5 (KOBE) TOTAL 15 visits

Dates of Examination of principal parts—Cylinders 10-10-53 17-10-53 Covers 10-10-53 17-10-53 Pistons 29-10-53 Piston rods —

Connecting rods 8-8-53, 29-8-53 Crank and Flywheel shafts 15-8-53 Intermediate shafts —
 NO. MD-CK 116 T. 53.0 B. 52.0 kg/mm²
 Tensile strength NO. MD-CK 115 T. 51.3 B. 51.3
 NO. MD-CK 116 K.T.R. 15-8-53
 Identification Marks NO. MD-CK 115 K.T.R. 15-8-53

Crank shaft: Material Electric Furnace Steel
 NO. MD-CK 116 T. 36% B. 34%
 Elongation NO. MD-CK 115 T. 36% B. 35%

Flywheel shaft, Material Identification Marks
 Identification marks on Air Receivers AR-528 (LLOYD'S TEST KOB W.T.P. 44 kg/cm² W.P. 27 kg/cm² KTR 17-11-53)
 AR-529

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 Electric Generator sets have been constructed under Special Survey in accordance with the Rules and approved plans.

The materials and workmanship were found to be satisfactory.
 The Electric Generator sets have been examined under full power conditions in the shop and found satisfactory.

It is submitted that the Electric Generator sets are eligible to be classed with this Society with the notation of +LMC when satisfactorily installed in the vessel.

The Electric Generator sets have now been satisfactorily installed on board the ship, tried under working conditions and found in order.

J. Kojima

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

The amount of Fee... £124,000.00 during construction
 Travelling Expenses (if any) £ : : When applied for 19th Nov. 1953
 When received 19

TUESDAY 29 JUN 1954

Committee's Minute
 Assigned *See Rpt. 4b.*

J. Kojima
 Surveyor to Lloyd's Register of Shipping.
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