

# REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 628

Date of writing Report 19... When handed in at Local Office 19... Port of ~~YOKOHAMA~~ KOBE  
 Received at London Office  
 Date, First Survey 14th APRIL, 1951 Last Survey 10th NOV. 1951  
 Number of Visits 40

Survey held at NAGASAKI, JAPAN  
 Date, First Survey 14th APRIL, 1951 Last Survey 10th NOV. 1951  
 Number of Visits 40  
 Single Screw vessel "ASO MARU"  
 Triple  
 Quadruple  
 Nagasaki  
 By whom built Nagasaki Shipyard & Engine Works, West Japan Heavy Industries Ltd.  
 Yard No. 1421 When built 1951, 11 mo

Engines made at Yokohama By whom made Yokohama Shipyard & Engine Works, East Japan Heavy Industries Ltd.  
 Port belonging to TOKYO, JAPAN.  
 Contract No. D142101, D142102, D142103 When made August 1951  
 Nagasaki By whom made Mitsubishi Electric Mfg. Co.  
 Contract No. 317990, 317991, 317992 When made JUNE, 1951  
 of Sets 3 (three) Engine Brake Horse Power 345 M.N. as per Rule 77 Total Capacity of Generators 690 (3x230) Kilowatts.  
 Set intended for essential services Yes

**OIL ENGINES, &c.**—Type of Engines Yokohama M.A.N. G5V 30/42 2 or 4 stroke cycle 4 Single or double acting Single  
 Maximum pressure in cylinders 55 kg/cm<sup>2</sup> Diameter of cylinders 300 m/m Length of stroke 420m/m No. of cylinders 5 No. of cranks 1(one)  
 Indicated pressure 7.15/cm<sup>2</sup> Firing order in cylinders 1-2-4-5-3- Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 361  
 Shut off a bearing between each crank Yes Moment of inertia of flywheel (±6 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 3530 kg.-m<sup>2</sup> Revolutions per minute 375 ✓  
 Wheel dia 1660 m/m Weight 2050 kg. Means of ignition Solid Injection Kind of fuel used Heavy Oil

Crank Shaft, dia. of journals as per Rule 174.8 m/m as fitted 220 m/m ✓ Crank pin dia 200 m/m ✓ Crank Webs Mid. length breadth 270 m/m Thickness parallel to axis -  
 Mid. length thickness 100 m/m Thickness round eyehole -  
 Flywheel Shaft, diameter as per Rule - as fitted - Intermediate Shafts, diameter as per Rule - as fitted - General armature, moment of inertia (±6 m<sup>2</sup> or Kg.-cm.<sup>2</sup>) 5.58x10<sup>6</sup>

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 Exhaust pipe cooled.

Boiling Water Pumps, No. 1 (one) Is the sea suction provided with an efficient strainer which can be cleared within the vessel.  
 Lubricating Oil Pumps, No. and size 1 (one) 750 RPM x 4.9 M<sup>3</sup> x Module 5, No. of teeth 11. Length of teeth 100 m/m

Compressors, No. 2 No. of stages 3 Diameters 280/120, 380/310, 120mm Stroke 180 m.m Driven by Generator Engine  
 Sucking Air Pumps, No. - Diameter - Stroke - Driven by -

**AIR RECEIVERS:**—Have they been made under Survey Yes. ✓ State No. of Report or Certificate M-4491  
 Each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.  
 Are the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces No special mean.

Are 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 -  
 Are they lap welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules -

**Working Air Receivers, No.** one ✓ Total cubic capacity 500 litre Internal diameter 696 m.m thickness 16 m.m.  
 Are they lap welded or riveted longitudinal joint riveted Material Boiler Plate Range of tensile strength 28-35 T/D" Working pressure by Rules 30 Kgs/cm<sup>2</sup>

**ELECTRIC GENERATORS:**—Type Open Drip Proof.  
 Pressure of supply 230 volts. Full Load Current 1,000 Amperes. Direct or Alternating Current Direct Current  
 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 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 welded that they cannot be accidentally earthed, short circuited, or touched Yes. Are the lubricating arrangements of the generators as per Rule Yes.

Are the generators under 100 kw. full load rating, have the makers supplied certificates of test Yes. and do the results comply with the requirements Yes.  
 Are the generators 100 kw. or over have they been built and tested under survey Yes.

Are there any driven machinery other than generator -

**PLANS.**—Are approved plans forwarded herewith for Shafting 4th October 1951 Receivers 10th April, 1951 Separate Tanks 16th October, 1951  
 (If not, state date of approval)  
 Torsional Vibration characteristics if applicable been approved 4th October 1951 Armature shaft Drawing No. C331195  
 (state date of approval)

**ARE GEAR** (For 3 Sets) Cylinder cover 1 set, Suction valve 3 set, Exhaust valve 5 sets, Fuel valve 5 sets,  
 Fuel valve 2 set, Main bearing tighten bolt 8 pieces, Piston 1 set, Piston packing ring 20 pieces, Connecting rod  
 and bearing 5 set, Small end bearing 5 set, Fuel oil pump 3 set, Fuel injection pipe 5 sets.

Generators; as per rule and one Armature in addition.

The foregoing is a correct description,

*K. Kagami*

Manufacturer.



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 Lloyd's Register  
 Foundation

	April	May	June	July	Aug.
D142101	14, 25	9, 14, 15, 19, 22, 24	5, 7, 27, 30	11, 13, 14, 18, 20, 25	6, 8, 9
D142102	14, 25	14, 15, 19, 24,	9, 27, 30	4, 17, 19, 20	6, 8, 9
D142103	14, 25	14, 15, 19, 22, 24	14, 27, 30	5, 9, 18, 20, 25, 27	8, 9, 10

Dates of Survey while building: During progress of work in shops - - }  
 During erection on board vessel - - } August, 24, 29 September 4, 7, 30 October 4, 20, 31 November 6, 10th 1951.  
 Total No. of visits 40.

Dates of Examination of principal parts—Cylinders 27-7-51 Covers 27-7-51 Pistons 4-7-51 Piston rods -

Connecting rods 25-7-51 Crank and Flywheel shafts 9-6-51

Crank shaft: Material Open Hearth Steel Tensile strength MDCK 320 . . . 35.5-34.9 ton/in<sup>2</sup>  
 MDF 321 . . . 34.7-35.5 "  
 MDCK 103 . . . 32.4-33.2 "  
 Elongation MDCK 320 . . . 31.5%  
 MDF 321 . . . 33.0%  
 MDCK 103 . . . 35.0%  
 Identification Marks LLOYD'S NO. MDCK 320 LLOYD'S NO. MDF 321 LLOYD'S NO. MDCK 103 JN R 4-6-51 JN R 23-5-51

Flywheel shaft, Material - Identification Marks -

Identification marks on Air Receivers - AR 234 M.O. LR 7-9-51

Is this machinery duplicate of a previous case - If so, state name of vessel -

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

These Engines have been constructed under the supervision of the Society's Surveyors in accordance with the Rules and approved plans.

Materials were found to be sound and free from defects and the workmanship is good.

The Engine have been examined under full load working condition in the shop and found satisfactory.

It is submitted that these machineries are eligible to be classed with this Society with notation of LMC when satisfactorily installed in the vessel.

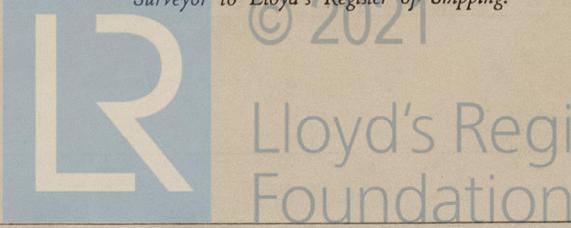
These Engines have been placed on board T.M.V. "ASO MARU" and on completion of installation the Generator sets have been examined under full load working condition, comprehensive de sea trials and found satisfactory.

The amount of Fee ... £ 168.600 : : When applied for 19  
 Travelling Expenses (if any) £ : : When received 19

FRI. 6 JUN 1957

Committee's Minute  
 Assigned See F.E. sketch, rpt.

*Abunil James*  
*Samson D Opat*  
 Surveyor to Lloyd's Register of Shipping.



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