

Rpt. 4c.

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 2170
AUG 1954

Received at London Office

Date of writing Report 19 When handed in at Local Office JUL 26 1954 19 Port of KOBE

No. in Survey held at Tamano & Osaka Date, First Survey 16th Oct., 1953 Last Survey 2nd June, 1954. Number of Visits 18

Reg. Book. 366975 on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel M.V. "INUISAN MARU" Tons Gross 7197.46 Net 4118.24

Built at Osaka, By whom built Fujinagata Shipbuilding Co., Ltd. Yard No. S 31 When built 1954 6mo.

Owners Inui Steam Ship Co., Ltd. Port belonging to Kobe

Oil Engines made at Tamano By whom made Mitsui Shipbuilding & Eng. Co., Ltd. Engine No. 518, 519 When made 1954 6mo.

Generators made at Tokyo By whom made Meidensia Electric Mfg. Co., Ltd. Generator No. 368473-4, 368475-6 When made 1954 6mo.

No. of Sets 2 B.H.P. of each Set 270 M.N. of each Set as per Rule 54 Capacity of each Generator 178.5 Kilowatts

Is Set intended for essential services. Yes

OIL ENGINES, &c.—Type of Engines B & W 525 MTH 40 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 55kg/cm² Diameter of cylinders 245mm Length of stroke 400mm No. of cylinders 5 No. of cranks 5

Mean indicated pressure 7.5kg/cm² Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 315mm

Is there a bearing between each crank Moment of inertia of flywheel (16 m² or Kg.-cm.²) 107075 Fore side 8292500 Revolutions per minute 450

Flywheel dia. 1350mm Weight 2646 kg Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, ^{Solid forged} ~~ATI built~~ dia. of journals as per Rule 151.12mm as fitted 170mm Crank pin dia. 170mm Crank Webs Mid. length breadth 290mm Mid. length thickness 90mm Thickness parallel to axis 90mm Thickness round eyeballs 82.5mm

Flywheel Shaft, diameter as per Rule Generator armature, moment of inertia (16 m² or Kg.-cm.²) 7190000

Are means provided to prevent racing of the engine 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 Lagged

Cooling Water Pumps, No. and how driven - Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Lubricating Oil Pumps, No. and size 1-gear pump per each engine, Breadth 75, Module 6, No. of teeth 15, RPM 450

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

Scavenging Air Pumps or Blowers, No. - How driven -

AIR RECEIVERS:—Have they been made under Survey Yes State No. of Report or Certificate AR-18742

(other than main engines) State full details of safety devices 10mm dia., 42mm depth fusible plug

Can the internal surfaces of the receivers be examined and cleaned Yes

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 -

Starting Air Receivers, No. 1 Total cubic capacity 100 litre Internal diameter 400 Shell 12mm thickness End 14mm

Seamless, lap welded or riveted longitudinal joint Welded Material boiler plate Range of tensile strength 46.2-54.8 Working pressure 25kgs/cm²

ELECTRIC GENERATORS:—Type 2-Drip proof self ventilated 210 KVA 3 phase Synchronous Generators.

Pressure of supply 450 volts. Full Load Current 270 Amperes. Direct or Alternating Current A.C.

If alternating current system, state the periodicity 60 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 - is an adjustable regulating resistance fitted in series with each shunt field -

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 -

If the generators are under 100 kw. full load rating, have the makers supplied certificates of test Yes and do the results comply with the requirements Yes

If the generators are 100 kw. or over have they been built and tested under survey Yes

Details of driven machinery other than generator 200 M3/h starting air compressor App. date 1-2-54

PLANS.—Are approved plans forwarded herewith for Shafting Receivers 27-10-53 Separate Tanks 11-2-54

Have Torsional Vibration characteristics if applicable been approved App. date 29-3-54 Armature shaft Drawing No. AP 1178

Has the spare gear required by the Rules been supplied 1-cylinder complete, 1 set of stud with nut for one cylinder,

5-fuel valves complete, 7-atomizers complete, 5-inlet valves complete, 5-exhaust valves complete,

2-starting valves complete, 2-safety valves complete, 1-connecting rod complete, 1-piston complete,

5 sets of piston rings, 5 sets of s ring, 2-studs with nuts for main bearing, 2 pair of main

bearing brass, 2-fuel pump complete.

The foregoing is a correct description.

M. Morija Manufacturer.



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Dates of Survey while building { During progress of work in shops - - 1953: Oct. 16, Nov. 10, 25 Dec. 15, 26 1954: Jan. 8, 26, 29, Feb. 2, 12, 16, 23 Mar. 8
 { During erection on board vessel - - 1954: May, 17 May, 21, 29, 31, June, 2
 Total No. of visits 18

Dates of Examination of principal parts—Cylinders 26-12-53 Covers - Pistons 12-2-54 Piston rods -

Connecting rods 2-2-54 Crank and Flywheel shafts 16-2-54 Intermediate shafts -

Crank shaft { Material Journal O.H. Steel (F.S.) Eng. 518 519 Tensile strength Journal 47.2-50.7kg/cm2 48.0-50.7
 { Material Arm Electric furnace steel (C.S.) Eng. No. 518 519 Arm. 44.2-49.2kg/cm2 44.5-50.9
 { Elongation Journal 34-39% 34-36% Identification Marks (Eng. 518 Eng. No. 519
 { Arm 31-36% 30-37% (M-CK 355 M-CK 358
 (JN 16-2-54 LR MH 2-2-54.

Flywheel shaft, Material Identification Marks -

Identification marks on Air Receivers AR 567 LLOYD'S TEST KOB W.T.P. 39kgs/cm2 W.P. 25kgs/cm2 YK LR 9-4-54.

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, approved plans and Secretary's letters.

The Materials were found sound and free from defects and workmanship is good.

The Electric Generator sets have been examined under full working condition during shop and comprehensive sea trials and found satisfactory.

40,452-T. (MADE AND PRINTED IN ENGLAND)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)
 16.8.54

The amount of Fee ... £ 782.000 When applied for JUL 26 1954 19

Travelling Expenses (if any) £ (See Rpt. 1954) When received 19

TUESDAY 14 SEP 1954

Committee's Minute

Assigned See Rpt. 46.

L. Burns
 Surveyor to Lloyd's Register of Shipping.

