

Rpt. 4c.

## REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS.

No. 527

Date of writing Report 21st October 1951. When handed in at Local Office 1951. Port of KOBE Received at London Office 14 JAN 1952

No. in Survey held at Tamano Japan Date, First Survey 4th August, 1950 Last Survey 27th September 1951  
Reg. Book. Number of Visits 57Screw vessel Motor Ship "AKAGISAN MARU" Tons { Gross 6637.03  
Net 3735.62

Built at Tamano, Japan By whom built Mitsui Shipbuilding &amp; Engineering Co., Ltd. Yard No. 563 When built 9, 1951

Owners Mitsui Senpaku K. K. Port belonging to Tokyo

Oil Engines made at Tamano, Japan By whom made Mitsui Shipbuilding &amp; Engineering Co., Ltd. ENG. Contract No. 399,400,401. When made 9, 1951

Generators made at Tokyo, Japan By whom made Tokyo Shibaura Electric Co., Ltd. Contract No. 5161015  
5161016  
5161017 When made 6, 1951

No. of Sets 3 Engine Brake Horse Power 350 X 3 M.N. as per Rule 87.5 X 3 = 262.5 Total Capacity of Generators 230 X 3 = 690 Kilowatts.

Is Set intended for essential services yes

OIL ENGINES, &amp;c.—Type of Engines B &amp; W 725 MTH40 2 or 4 stroke cycle 4 ✓ Single or double acting Single

Maximum pressure in cylinders 50 kg/cm<sup>2</sup> Diameter of cylinders 245 mm Length of stroke 400 mm No. of cylinders 7 ✓ No. of cranks 7 ✓Mean indicated pressure 7.5 kg/cm<sup>2</sup> Firing order in cylinders 1-2-4-6-7-5-3 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 315 mmIs there a bearing between each crank yes Moment of inertia of flywheel (6 m<sup>2</sup> Kg.-cm.<sup>2</sup>) 5642500 Revolutions per minute 425 ✓

Flywheel dia 1350 mm Weight 2140 kgs Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 152.20 mm as fitted 170 mm Crank pin dia 157 mm Crank Webs Mid. length breadth — Mid. length thickness 90 mm shrunk Thickness parallel to axis 90 mm Thickness round eyehole 72.5 mm

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>) 1672500

Are means provided to prevent racing of the engine when declutched — 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. — 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 each, Breadth 75 mm, module 6, No. of teeth 15 x 31

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

Scavenging Air Pumps, No. — Diameter — Stroke — Driven by —

AIR RECEIVERS:—Have they been made under Survey yes ✓ State No. of Report or Certificate M-3275

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 1 mud 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 0.10 cubic meter Internal diameter 420 mm thickness 11 mm

Seamless, lap welded or riveted longitudinal joint Riveted ✓ Material O.H. steel Range of tensile strength 27.8~29.7 T<sub>6</sub> Working pressure by Rules 33.7 kg/cm<sup>2</sup>

ELECTRIC GENERATORS:—Type Self ventilated, drip proof open type

Pressure of supply 225 volts. Full Load Current 1022 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 25-7-51 Receivers 24-5-51 Separate Tanks 9-7-51

(If not, state date of approval)

Have Torsional Vibration characteristics if applicable been approved yes, 25-7-51 Armature shaft Drawing No. 3D-3213

SPARE GEAR 7 exhaust valves complete, 6 inlet valves complete, 2 safety valves, 10 fuel oil valves, 2

indicator valves complete, 1 piston, 1 set studs &amp; nuts for cylinder cover, 1 gudgeon pin, 2 sets crank pin bearing bolts

&amp; nuts, 1 set crank pin bearings, 2 sets bolts &amp; nuts for main bearings, 3 fuel oil pumps, 1 connecting rod,

1 cylinder complete, 7 fuel pump housings with plunger.

The foregoing is a correct description,

Manufacturer.

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MITSUI SHIPBUILDING & ENGINEERING CO., LTD., TAMANO WORKS.S. Tanaka  
Senior Managing Director.  
Lloyd's Register Foundation

1950 - AUG. 4. 17. SEP. 18 NOV. 7 DEC. 1. 2. 3. 5. 7. 13. 16.  
 During progress of work in shops - } 1951 - JAN. 4. 23. FEB. 3. 7. 12. 20. MAR. 9. 19. 22. 30. APR. 4. 10. 11. 14. 27. 30. MAY. 8. 9. 11. 14. 18. 22. 26. 29. JUN. 1. 4. 9. 12.  
 13. 15. 16. 22. 26. 27. 28. 30. JUL. 6. 13. 17. 24. 31. AUG. 7. 14. SEP. 20  
 During erection on board vessel - - } 1951 - JUL. 17. SEP. 23. 27  
 Total No. of visits 57

Dates of Examination of principal parts—Cylinders 16-6-51. Covers — Pistons 14-8-51 Piston rods —

Connecting rods 28-6-51 Crank and Flywheel shafts 17-7-51 Intermediate shafts —

Crank shaft	Material	Journals :- O.H. Steel (F.S), Arms :- Electric furnace steel (C.S). Tensile strength			ENG. NO.	399	400	401	
	Elongation	Journals	31~37%	30~38%	31~37%	Journal	29.5~31.7 1/16"	30.3~32.2 1/16"	30.3~32.0 1/16"
		Arms	32~35%	28~32%	32~35%	Arm	29.7~30.4 1/16"	29.2~33.3 1/16"	28.7~31.1 1/16"
						Identification Marks	M-CK304	M-CK305	M-CK306
							MHR 26-6-51	MHR 13-7-51	JNR 17-7-51

Flywheel shaft, Material — Identification Marks —  
 Identification marks on Air Receivers NO. AR 184 LLOYD'S TEST W.P. 25 kg/cm<sup>2</sup> W.T.P. 39.1 kg/cm<sup>2</sup> MHR 7-8-51.

Is this machinery duplicate of a previous case NO If so, state name of vessel —

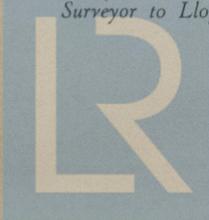
**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)

The Electric Generators of this vessel have been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.  
 The materials and workmanship are sound and good.  
 The Generators have been examined under working condition during shop and comprehensive sea trials and found satisfactory.

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

FRI. 18 APR 1952

Committee's Minute  
 Assigned See F.E. mchly. rpt.

*Aburns & Haynes*  
 Surveyor to Lloyd's Register of Shipping.  
  
 Lloyd's Register Foundation

CC 6. 51 K01E  
 (The Surveyors are requested not to write on or below the space for Committee Minute.)