

Rpt. 13.

No. 3311-D

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 17 August 1960 When handed in at Local Office 19 Port of Yokohama

No. in Survey held at Yokohama Date, First Survey 26-2-1960 Last Survey 28-6-1960
Reg. Book. (No. of Visits 16)

44538 on the "SHIMIDA MARU" Tons Gross 9431 Net 5330.54
Built at Yokohama By whom built Yokohama Shipyard & Engine Works Mitsubishi Nippon Hvy Ind Ltd. No. S836 When built 2-1960
Owners Nippon Yusen Kaisha Port belonging to Tokyo

Installation fitted by Yokohama Shipyard & Engine Wks; Mitsubishi Nippon Hvy Ind Ltd. When fitted 6 - 1960

Is vessel equipped for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No Radar Yes

Plans, have they been submitted and approved Yes System of Distribution D.C. Ward Leonard - 5 ton Winches & Windlass AC 3 Ph 3 Wire Voltage of Lighting -

Heating - Power 220 D.C. or A.C., Lighting 110 Power 440 If A.C. state frequency 60 c/s

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted with a trip switch Generators, are they compound wound, and level compounded under working conditions -

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole -

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing Yes Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators Engine Room, port side

No. 1 Forward, inner. No. 2 Forward, outer. No. 3 After

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes Switchboards, where are main switchboards placed Engine Room Lower Platform, forward port side.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes, what insulation is used for the panels Synthetic Resin, if of synthetic insulating material is it an Approved Type Yes, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule - Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear for each generator and arrangement of equaliser switches 3-Pole Air Circuit Breakers with disconnecting switches.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit 3-Pole Deion Thermal type

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 13
ammeters 8 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided 3-Lamp System Preference Tripping, state if provided Yes, and tested Yes

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

make of fuses Utsunomiya "Cello-Lite" are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate Instant - 600% of Rated Current, and at what current do the reverse current protective devices operate 13% of Rated Current Cables, are they insulated and protected as per Rule Yes

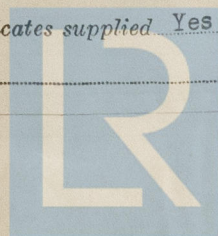
if otherwise than as per Rule are they of an Approved Type - state maximum fall of pressure between bus bars and any point under maximum load 5.3 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes

Are all the cable runs in accessible positions not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are any cables laid under machines or floorplates Yes, if so, are they adequately protected Yes State type of cables (if in conduit this should also be stated) in machinery spaces VC LASW braided, galleys VC LASW braided and laundries VC LASW braided State how the cables are supported or protected Where exposed to risk of mechanical damage, in accordance with requirements of M-914; In Cold Storage Chambers, in accordance with requirements of M-916.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes Refrigerated chambers, are the cables and fittings as per Rule Yes

Have refrigeration fan motors been constructed under survey Yes and test certificates supplied Yes

Are the motors accessible for maintenance at all times Yes



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position BRIDGE DECK, port side aft

Navigation Lamps, are they separately wired. Yes. controlled by separate double pole switches and fuses. Yes. Are the switches and fuses in a position accessible only to the officers on watch. Yes. Is an automatic indicator fitted. Yes. Is an alternative supply provided. Yes

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule. Yes. state battery capacity in ampere hours. 200 (2 sets) Where required to do so does it comply with 1948 International Convention. Yes

Lighting, is fluorescent lighting fitted. Yes. If so, state nominal lamp voltage. 110 and compartments where lamps are fitted

Eng. Room; Passage ways; Wheel House; W/T Room; Dining & Smoke Rooms; Cabins

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Yes

Searchlights, No. of One, whether fixed or portable. Fixed, are they of the carbon arc or of the filament type. Filament

Heating and Cooking, is the general construction as per Rule. Yes, are the frames effectually earthed. Yes, are heaters in the accommodation of the convection type. Yes. Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. Yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. Yes

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. Yes

Lightning Conductors, where required are they fitted as per Rule. Yes

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with. Are all fuses of an Approved Cartridge Type. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. Are all cables lead covered as per Rule.

E.S.D., if fitted state maker. Kaiyo Denki Co., Ltd. Location of transmitter and receiver. D.B. Tks between frames 126-127

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations. Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory. Yes

PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | No. of | MAKER. | RATED AT | | | | TYPE. | PRIME MOVER. |
|------------------------------|--------|-----------------------|-------------------|--------|-------|----------------|-------------------|---|
| | | | Kw. per Generator | Volts. | Amps. | Revs. per Min. | | |
| MAIN | 3 | Fuji Denki Seizo K.K. | 224 | 445 | 389 | 514 | G5V M.A.N. Diesel | Tokyo Motor Venicle Works (Mitsubishi Nippon Hvy Ind Ltd) |
| EMERGENCY ROTARY TRANSFORMER | | | | | | | | |

GENERATOR CABLES.

| DESCRIPTION. | No. of | Kw. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|--------------------------|--------|-----|---------------------------|--|-----------------------------|---------|---|-------------|----------------------|
| | | | No. in Parallel per Pole. | Sectional Area or No. and size of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| MAIN GENERATOR | 3 | 224 | 2 | 2 x 0.2 | 389 | 200 x 2 | 50 | VC | LC & SW Braided |
| " EQUALISER | | | | | | | | | |
| EMERGENCY GENERATOR | | | | | | | | | |
| ROTARY TRANSFORMER MOTOR | | | | | | | | | |
| " GENERATOR | | | | | | | | | |

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

| DESCRIPTION. | No. | Sectional Area or No. and size of Strands. Sq. ins. or sq. mm. | MAXIMUM CURRENT IN AMPERES. In the Circuit. | Rule. | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|--------------------------|-----|--|---|---------|---|-------------|----------------------|
| P-1 Power Section Board | 1 | 0.0045 | 7.55 | 19 | 99 | VC | LC & SW Braided |
| P-2 | 1 | 0.04 | 68.6 | 70 | 66 | " | " |
| P-3 | 1 | 0.0145 | 34.4 | 38 | 165 | " | " |
| P-4 | 1 | 0.0145 | 23.6 | 38 | 195 | " | " |
| P-5 | 1 | 0.01 | 13 | 29 | 78 | " | " |
| P-6 | 1 | 0.01 | 23.5 | 29 | 84 | " | " |
| P-7 | 1 | 0.10 | 127 | 128 | 57 | " | " |
| P-8 | 1 | 0.01 | 25.4 | 29 | 60 | " | " |
| P-9 | 1 | 0.007 | 17.9 | 19 | 63 | " | " |
| P-10 | 1 | 0.0145 | 29.4 | 38 | 78 | " | " |
| P-11 | 1 | 0.0045 | 6 | 14 | 75 | " | " |
| No.1 Winch Section Board | 1 | 0.20 | 99 | 200 | 115 | " | " |
| No.2 | | 0.15 x 2 | 322.4 | 166 x 2 | 396 | " | " |
| No.3 | 2 | 0.15 x 2 | 287 | 166 x 2 | 462 | " | " |
| No.4 | 2 | 0.20 | 195 | 200 | 115 | " | " |

DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

| DESCRIPTION. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|-----------------------------|---------------------------|--|-----------------------------|-------|---|-------------|----------------------|
| | No. in Parallel per Pole. | Sectional Area or No. and size of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| L1-Light, Section Board. | 1 | 0.1 | 88 | 128 | 83 | VC | LC & SW Braided |
| LN-Dist, Fuse Board. | 1 | 0.007 | 6.3 | 19 | 45 | " | " |
| L1-A | 1 | 0.0225 | 31.8 | 51 | 45 | " | " |
| L1-B | 1 | 0.0225 | 22.7 | 51 | 83 | " | " |
| L1-C | 1 | 0.0225 | 25.6 | 51 | 83 | " | " |
| L2-Light, Section Board. | 1 | 0.06 | 69.3 | 91 | 66 | " | " |
| L2-A Dist, Fuse Board. | 1 | 0.0145 | 20.3 | 38 | 66 | " | " |
| L2-B | 1 | 0.0225 | 23.1 | 51 | 45 | " | " |
| L2-C | 1 | 0.0145 | 11.0 | 38 | 231 | " | " |
| L2-D | 1 | 0.0145 | 10.0 | 38 | 264 | " | " |
| L3-Light, Section Board. | 1 | 0.03 | 38.7 | 58 | 165 | " | " |
| L3-A Dist, Fuse Board. | 1 | 0.01 | 16.3 | 29 | 99 | " | " |
| L3-B | 1 | 0.0145 | 21.7 | 38 | 17 | " | " |
| L4-Light, Section Board. | 1 | 0.03 | 39.5 | 58 | 198 | " | " |
| L4-A Dist, Fuse Board. | 1 | 0.0145 | 20.0 | 38 | 17 | " | " |
| L4-B | 1 | 0.01 | 18.0 | 29 | 99 | " | " |
| L5-Light, Section Board. | 1 | 0.06 | 79.4 | 91 | 19 | " | " |
| L5-A Dist, Fuse Board. | 1 | 0.03 | 37.8 | 58 | 75 | " | " |
| L5-B | 1 | 0.03 | 41.6 | 58 | 45 | " | " |
| P2-B Dist, Fuse Board. | 1 | 0.01 | 15.0 | 29 | 66 | " | " |
| P2-C | 1 | 0.01 | 14.7 | 29 | 66 | " | " |
| C-Comm. Section Board. | 1 | 0.0145 | 27.0 | 38 | 33 | " | " |
| C-A Dist, Fuse Board. | 1 | 0.0145 | 16.8 | 38 | 105 | Rubber | " |
| C-B | 1 | 0.003 | 4.8 | 15 | 15 | " | " |
| Navigation Lights Indicator | 1 | 0.007 | 1.8 | 17 | 115 | " | " |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | No. | H.P. KW | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULATION. | PROTECTIVE COVERING. |
|--|-----|----------|---------------------------|--|-----------------------------|-------|---|-------------|----------------------|
| | | | No. in Parallel per Pole. | Sectional Area or No. and size of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| S.W. Cooling Pump | 1 | 45 | 1 | 0.04 | 71 | 70 | 99 | VC | LC & SW Braided |
| F.W. Cooling Pump | 1 | 52 | 1 | 0.06 | 81 | 91 | 120 | " | " |
| Stand-By SW/FW Cooling Pump | 1 | 52 | 1 | 0.06 | 81 | 91 | 115 | " | " |
| Lub: Oil Pump | 2 | 26 | 1 | 0.0225 | 48.5 | 51 | 148 | " | " |
| Fire Pump | 1 | 37 | 1 | 0.04 | 58.5 | 70 | 132 | " | " |
| Bilge/Ballast Pump | 1 | 37 | 1 | 0.04 | 58.5 | 70 | 132 | " | " |
| O.F. Transfer Pump | 2 | 15 | 1 | 0.01 | 26.5 | 29 | 115 | " | " |
| Bilge Pump | 1 | 4.5 | 1 | 0.0045 | 8 | 14 | 115 | " | " |
| Lub: Oil Transfer Pump | 1 | 3.7 | 1 | 0.0045 | 7.2 | 14 | 105 | " | " |
| Steering Gear | 2 | 19 | 1 | 0.0225 | 35.4 | 51 | 395 | " | " |
| Ref: Compressor | 3 | 22/11 | 1 | 0.0145 | 36.7 | 38 | 43 | " | " |
| E.R. Vent Fan (Exhaust) | 2 | 3.7 | 1 | 0.0045 | 6.8 | 14 | 148 | " | " |
| E.R. Supply Fan | 2 | 3.7 | 1 | 0.0045 | 6.8 | 14 | 115 | " | " |
| O.F. Service Pump | 1 | 1.5 | 1 | 0.003 | 3 | 7 | 26 | Rubber | " |
| O.F. Supply Pump | 1 | 1.5 | 1 | 0.003 | 3 | 7 | 33 | " | " |
| F.D. Fan | 1 | 3.7 | 1 | 0.003 | 7 | 7 | 50 | " | " |
| Boiler Circ: Pump | 2 | 4.5 | 1 | 0.0045 | 8 | 11 | 43 | " | " |
| O.F. Burning Press: Pumps | 1 | 0.75 | 1 | 0.003 | 2.4 | 7 | 26 | " | " |
| Sanitary Pump | 1 | 3.7 | 1 | 0.003 | 6.7 | 7 | 20 | " | " |
| Fresh Water Pump | 1 | 2.2 | 1 | 0.003 | 4.5 | 7 | 40 | " | " |
| Cargo Caire Cooling Pump | 1 | 3.7 | 1 | 0.003 | 6.7 | 7 | 10 | " | " |
| Dom: Ref: Compressor | 1 | 5.5 | 1 | 0.0045 | 9.6 | 11 | 33 | " | " |
| " " Circulating Pump | 1 | 1.1 | 1 | 0.003 | 2.2 | 7 | 85 | " | " |
| Ref: Circ: Pumps | 2 | 5.5 | 1 | 0.0045 | 9.6 | 11 | 50 | " | " |
| Ref: Cooling Air Fans | 4 | 2.6/0.75 | 1 | 0.003 | 4.5 | 7 | 165 | " | " |

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

H. Suzuki
Yokohama Shipyard & Engine Works

Electrical Contractors.

Date 29-8-1960

COMPASSES.

Have the compasses been adjusted under working conditions..... Yes

H. Suzuki
Yokohama Shipyard & Engine Works

Builder's Signature.

Date 29-8-1960

Have the foregoing descriptions and schedules been verified and found correct..... Yes

Is this installation a duplicate of a previous case..... Yes If so, state name of vessel. SAITAMA MARU

Plans. Are approved plans forwarded herewith..... No If not, state date of approval. 3-2-1960

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith..... Yes

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.)

The electrical equipment of this vessel has been installed in accordance with the Society's Rules, approved plans and Secretary's letters.

The materials and workmanship are satisfactory.

On completion, the installation was operated under full load working conditions with satisfactory results and the insulation resistance of all circuits and apparatus was measured and found good.

The equipment is, in my opinion, suitable for a classed vessel.

Total Capacity of Generators..... 672 Kilowatts

CONSTR. £ 51,750.

The amount of Fee ... £

INSTAL. £ 203,400.

When applied for,

19

When received,

19

Travelling Expenses (if any) £

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

Committee's Minute

FRIDAY 14 OCT 1960

Assigned

See Rpt. 1



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