

Rpt. 13.

No. 682

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

19 MAY 1954

Date of writing Report 19 When handed in at Local Office 19 Port of Kobe, Japan

No. in Survey held at Kobe Date, First Survey 16, 10, 51 Last Survey 6th Dec., 1951
Reg. Book. (No. of Visits 12)on the Single screw steel steam ship "Nippoh Maru" Tons { Gross 6209.88
Net 3614.10

Built at Kobe By whom built Kawasaki Dockyard Co., Ltd. Yard No. 913 When built Dec. 51

Owners Nippoh Kaiun Kaisha, Ltd. Port belonging to Kobe

Installation fitted by Kawasaki Dockyard Co., Ltd. When fitted Dec. 51

Is vessel equipped for carrying Petroleum in bulk Yes 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 Two wire circuit Voltage of Lighting 220 V

Heating 220 V Power 220 V D.C. or A.C., Lighting D.C Power D.C If A.C. state frequency —

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 Yes Generators, are they compound wound Yes, and level compounded under working conditions Yes

if not compound wound state distance between generators — and from switchboard — Are the generators arranged to run in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole Negative

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes Have certificates of test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes

Position of Generators S.B. side in engine room Frame No. 72-74

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 S.B. side in engine room, Frame No. 64-66

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 (Phenolic resin) bonded board

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 A tripple pole linked air circuit breaker (two pole for main one pole for equalizer) with overload & reverse current trips arranged with equalizer circuit being closed before main circuits and opened after main circuits, and a tripple pole linked switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Generally double pole linked switch with a fuse on each pole is used, and for steering engine circuits and for circuits having rating capacity above 200A double pole linked air circuit breaker is used

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 5

ammeters 3 voltmeters — synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided 2 earth lamps with metal filament

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Siemens type approval now contemplated

make of fuses Fuji Electric Co. Ltd., are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 150% and at what current do the reversed current protective devices operate 100 A

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

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 5V for power 1.5V for Wireless

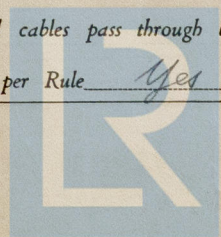
area of 0.01 square inch and above provided with soldering sockets Yes Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes

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 (Part), if so, are they adequately protected Yes

Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes or of the "HR" type — State how the cables are supported or protected Generally supported by metal clips and protected by lead alloy-sheathed with armouring In engine room, carried on galvanized perforated plating; where exposed to mechanical damage protected by strong sheet iron plating or conduits

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



Lloyd's Register Foundation

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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 S.B. side in engine room. Frame No. 70-75. 2nd deck.

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 and fitted as per Rule Yes, are they adequately ventilated Yes. state battery capacity in ampere hours 144AH. 2 sets.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present No. if so, how are they protected —. Are all fittings suitably ventilated Yes.

Searchlight Lamps, No. of 4, 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 —. 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 —.

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

Control Gear and Resistances, and they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule —. Ships carrying Oil having a Flash Point 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 —, make of fuse —. Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships —. Are the cables lead covered as per Rule —.

E. S. D., if fitted state maker Nippon Electric Co. Ltd. Location of transmitter Shell plan F. No. 84-85 and receiver Shell plan F. No. 84-85.

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 | | | | PRIME MOVER. | |
|------------------------------------|--------|-------------------------------|--------------------------|--------|----------|----------------|------------------|-------------------------------------|
| | | | Kilowatts per Generator. | Volts. | Amperes. | Revs. per Min. | TYPE. | MAKER. |
| MAIN | 2 | Kawasaki Rockyard Co. Ltd. | 160 | 230. | 696 | 1500. | Steam Turbine | Kawasaki Rockyard Co. Ltd. |
| EMERGENCY ROTARY TRANSFORMER | 1 | Kawasaki Rockyard Co. Ltd. | 25 | 230 | 109 | 600 | Diesel | Osaka Katsudo Machining Co. Ltd. |

GENERATOR CABLES.

| DESCRIPTION. | KILOWATTS. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULA- TION. | PROTECTIVE COVERING. |
|------------------------------|------------|---------------------------|----------------------------------------------------------------|-----------------------------|-------|-----------------------------------------|------------------|---------------------------------|
| | | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| MAIN GENERATOR ... No. 1 | 160 | 2 | 0.75 | 696 | 461x2 | 40x2 | Rubber | Lead covered and steel armoured |
| " " EQUALISER ... | | 1 | 0.75 | | 461 | 40 | " | " |
| " " MAIN GENERATOR ... No. 2 | 160 | 2 | 0.75 | 696 | 461x2 | 40x2 | " | " |
| " " EQUALISER | | 1 | 0.75 | | 461 | 40 | " | " |
| EMERGENCY GENERATOR ... | 25 | 1 | 0.3 | 109 | 240 | 60x2 | Rubber | Lead covered and steel armoured |
| ROTARY TRANSFORMER: MOTOR | | | | | | | | |
| " " GENERATOR | | | | | | | | |

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

| DESCRIPTION. | | KILOWATTS. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULA- TION. | PROTECTIVE COVERING. |
|-----------------------------------------------------|---|------------|---------------------------|----------------------------------------------------------------|-----------------------------|-------------------|-----------------------------------------|---------------------------------|----------------------|
| | | | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| ES-1 From Main Switchboard to Emergency Switchboard | 1 | 0.5 | | | 332 | 60x2 | Rubber | Lead covered and steel armoured | |
| ES-2 From Emergency Switchboard to Main Switchboard | 2 | 0.5 | | | 332x2 | 60x2 | " | " | |
| From Main Switchboard to Spare Connection Box | 1 | 0.3 | 200 | 240 | 75x2 | " | " | " | |
| From Main Switchboard to Dist. Box (PD-1) | 1 | 0.0225 | 39 | 46 | 60x2 | " | " | " | |
| Do (PD-3) | 1 | 0.01 | 19 | 31 | 80x2 | " | " | " | |
| Do (PD-5) | 1 | 0.01 | 26 | 36 | 45x2 | Varnished Cambric | " | " | |
| Do (PD-7) | 1 | 0.007 | 14 | 24 | 30x2 | " | " | " | |
| From Emergency Switchboard to Section Box (L-1) | 1 | 0.0225 | 43 | 46 | 15x2 | " | " | " | |
| Do (L-3) | 1 | 0.0225 | 23 | 46 | 60x2 | " | " | " | |
| Do (L-5) | 1 | 0.01 | 13 | 31 | 150x2 | " | " | " | |
| Do (L-7) | 1 | 0.0145 | 23 | 37 | 100x2 | " | " | " | |
| Do (L-9) | 1 | 0.0145 | 23 | 37 | 60x2 | " | " | " | |

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

| DESCRIPTION. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULA- TION. | PROTECTIVE COVERING. | |
|-----------------------------------------------|---------------------------|----------------------------------------------------------------|-----------------------------|-------|-----------------------------------------|-------------------|---------------------------------|------------------|
| | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | | |
| From Emergency Switchboard to - | | | | | | | | |
| Nautical Instruments Dist. Box | 1 | 0.003 | 5 | 10 | 120x2 | Rubber | Lead covered and steel armoured | (Room temp 40°C) |
| Navigation Light Dist. Box | 1 | 0.003 | 1 | 10 | 150x2 | " | " | " |
| Electric fan Dist. Box | 1 | 0.007 | 6 | 24 | 75x2 | " | " | " |
| Battery charging switchboard | 1 | 0.0145 | 17 | 37 | 120x2 | " | " | " |
| Wireless switchboard | 1 | 0.3 | 60 | 184 | 120x2 | " | " | " |
| Gyro switchboard | 1 | 0.007 | 20 | 24 | 120x2 | " | " | " |
| From Lighting Section Box to - | | | | | | | | |
| Lighting Distribution Box (Engine room) | 1 | 0.01 | 29.5 | 31 | 20x2 | " | " | " |
| Do (Boiler room) | 1 | 0.01 | 13.8 | 37 | 45x2 | Varnished cambric | " | (Room temp 50°C) |
| Do (Bridge deck lighting) | 1 | 0.007 | 7.8 | 24 | 45x2 | Rubber | " | (Room temp 40°C) |
| Do (Bridge deck S.B. light) | 1 | 0.007 | 5.5 | 24 | 45x2 | " | " | " |
| Do (Upper deck lighting) | 1 | 0.007 | 9.9 | 24 | 30x2 | " | " | " |
| Do (Navigation bridge deck lighting) | 1 | 0.007 | 7.1 | 24 | 30x2 | " | " | " |
| Do (Boat deck lighting) | 1 | 0.007 | 6.3 | 24 | 15x2 | " | " | " |
| Do (Freshship cargo lighting) | 1 | 0.01 | 11.6 | 31 | 45x2 | " | " | " |
| Do (Do) | 1 | 0.01 | 11.8 | 31 | 120x2 | " | " | " |
| Do (Aftership cargo lighting) | 1 | 0.01 | 11.6 | 31 | 45x2 | " | " | " |
| Do (Do) | 1 | 0.01 | 11.8 | 31 | 120x2 | " | " | " |
| From Battery Switchboard to Upper spare light | 1 | 0.03 | 10 | 53 | 45x2 | " | " | " |
| Do to Lower spare light | 1 | 0.03 | 7 | 53 | 60x2 | " | " | " |

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | | No. | B.H.P. | CONDUCTORS. | | MAXIMUM CURRENT IN AMPERES. | | APPROX. LENGTH (lead plus return feet). | INSULA- TION. | PROTECTIVE COVERING. | |
|-------------------------------------------|---|-----|--------|---------------------------|----------------------------------------------------------------|-----------------------------|-------|-----------------------------------------|-------------------|---------------------------------|------------------|
| | | | | No. in Parallel per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | | |
| From Main Switchboard to - | | | | | | | | | | | |
| Steering engine motor | 1 | 1.0 | 1 | 0.1 | | 40 | 118 | 200x2 | Rubber | Lead covered and steel armoured | (Room temp 40°C) |
| Do | 1 | 1.0 | 1 | 0.1 | | 40 | 118 | 240x2 | " | " | " |
| Main circulating pump | 1 | 65 | 1 | 0.5 | | 242 | 332 | 160x2 | " | " | " |
| Lub. oil pump No. 1 | 1 | 20 | 1 | 0.1 | | 77 | 118 | 60x2 | " | " | " |
| Lub. oil pump No. 2 | 1 | 20 | 1 | 0.1 | | 77 | 118 | 60x2 | " | " | " |
| Induced fan No. 1 | 1 | 15 | 1 | 0.03 | | 59 | 60 | 60x2 | Varnished cambric | " | (Room temp 50°C) |
| Induced fan No. 2 | 1 | 15 | 1 | 0.03 | | 59 | 60 | 70x2 | " | " | " |
| General service pump | 1 | 35 | 1 | 0.25 | | 132 | 214 | 90x2 | Rubber | " | (Room temp 40°C) |
| Fire & bilge pump | 1 | 35 | 1 | 0.25 | | 132 | 214 | 90x2 | " | " | " |
| Fuel oil transfer pump | 1 | 10 | 1 | 0.0225 | | 40 | 65 | 75x2 | Varnished cambric | " | (Room temp 50°C) |
| Condensate pump No. 1 | 1 | 10 | 1 | 0.04 | | 40 | 64 | 75x2 | Rubber | " | (Room temp 40°C) |
| Condensate pump No. 2 | 1 | 10 | 1 | 0.04 | | 40 | 64 | 75x2 | " | " | " |
| Forced draft fan | 1 | 35 | 1 | 0.25 | | 132 | 155 | 75x2 | " | " | (Room temp 45°C) |
| Ballast pump | 1 | 30 | 1 | 0.2 | | 114 | 184 | 85x2 | " | " | (Room temp 40°C) |
| Turning motor | 1 | 5 | 1 | 0.01 | | 21 | 31 | 60x2 | " | " | " |
| Ventilating fan | 1 | 35 | 1 | 0.007 | | 15 | 24 | 120x2 | " | " | " |
| Do | 1 | 3.5 | 1 | 0.007 | | 15 | 24 | 120x2 | " | " | " |
| Do (Boiler room) | 1 | 3.5 | 1 | 0.007 | | 15 | 24 | 130x2 | Varnished cambric | " | (Room temp 50°C) |
| Fresh water pump | 1 | 2 | 1 | 0.0045 | | 9 | 15 | 60x2 | Rubber | " | (Room temp 40°C) |
| Universal machine | 1 | 3 | 1 | 0.007 | | 13 | 24 | 75x2 | " | " | " |
| Generator turbine condensate pump (No. 1) | 1 | 2 | 1 | 0.0045 | | 9 | 15 | 45x2 | " | " | " |
| Do (No. 2) | 1 | 2 | 1 | 0.0045 | | 9 | 15 | 45x2 | " | " | " |
| Refrigerating machine starter | 1 | 5 | 1 | 0.0225 | | 21 | 46 | 60x2 | " | " | " |
| Do (No. 2) | 1 | 5 | 1 | 0.0225 | | 21 | 46 | 60x2 | " | " | " |
| From Power Distribution Box to - | | | | | | | | | | | |
| Booster pump No. 1 | 1 | 4 | 1 | 0.01 | | 17 | 31 | 15x2 | " | " | " |
| Do No. 2 | 1 | 4 | 1 | 0.01 | | 17 | 31 | 15x2 | " | " | " |
| From Power Distribution Box to - | | | | | | | | | | | |
| Lub. oil pump for main feed pump | 1 | 1 | 1 | 0.003 | | 5 | 10 | 40x2 | " | " | " |
| Ventilating fan | 1 | 2 | 1 | 0.007 | | 9 | 24 | 90x2 | " | " | " |
| Oil burning fan | 1 | 1 | 1 | 0.003 | | 5 | 10 | 45x2 | " | " | " |
| Oil burning pump No. 1 | 1 | 3 | 1 | 0.007 | | 13 | 24 | 15x2 | Varnished cambric | " | (Room temp 50°C) |
| Oil burning pump No. 2 | 1 | 3 | 1 | 0.007 | | 13 | 24 | 15x2 | " | " | " |
| Lub. oil purifier | 1 | 2 | 1 | 0.0045 | | 9 | 15 | 15x2 | Rubber | " | (Room temp 40°C) |
| Evaporator pump | 1 | 1 | 1 | 0.003 | | 5 | 10 | 24x2 | " | " | " |

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.

Takeo Morimoto

Electrical Contractors.

Date

COMPASSES.

Have the compasses been adjusted under working conditions

yes

Takeo Morimoto

Builder's Signature.

Date

Standing Director, Kawasaki Dockyard, Kobe, Japan.

Have the foregoing descriptions and schedules been verified and found correct

Is this installation a duplicate of a previous case

—

If so, state name of vessel

—

Plans. Are approved plans forwarded herewith

No

If not, state date of approval

20 June 1951

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

yes

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The Electrical Installation of this vessel has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The Materials were found to be sound and free from defects and the workmanship is good.

The Generators, Motors etc. have been examined under full load working conditions to Rules requirements and found Satisfactory.

Total Capacity of Generators *345* Kilowatts.

(Included Emergency Generator)

The amount of Fee ...

... £

220.580

When applied for,

19

When received,

19

Travelling Expenses (if any) £

:

:

Committee's Minute

FRI, 20 JUN 1952

Assigned

Su F.E. mch, rpt

H. Burnie & K. Takashi
Surveyor to Lloyd's Register of Shipping.