

Rpt. 13.

No. 663

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

11 MAY 1952

Date of writing Report 28th Jan 1951 When handed in at Local Office 19 Port of KobeNo. in Survey held at Aioi Japan Date, First Survey 1st Aug 1951 Last Survey 14th December 1951
Reg. Book. (No. of Visits 9)

on the Single screw M/V "NISSYO - MARU"

Tons { Gross 11865.69
Net 8932.01

Built at Aioi Japan By whom built Harima Shipbuilding & Engineering Co. Ltd. Yard No. 466 When built Dec. 1951

Owners Idemitsu Kosen K.K. Port belonging to Tokyo

Installation fitted by Harima Shipbuilding & Engineering Co. Ltd. When fitted Dec. 1951

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 insulated Voltage of Lighting 110

Heating 220 Power 220 D.C. or A.C., Lighting A.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 — 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 pole 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 Portside & starboard side on fore engine floor

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 on fore engine floor

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 ph. resin bonded board

synthetic insulating material, 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

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 For 240 Kw main generators; 3-pole (Center pole, for equalizer) circuit -

breaker with over load trip and reverse current trip and for 40 Kw Aux. generators; 2-pole

circuit breaker with over load trip

and the switch and fuse gear (or circuit breakers) for each outgoing circuit 2-pole air circuit breaker with over-load trip

for outgoing circuit to steering gear and gears rated 200 A and over, and 2-pole linked

switches with fuses on each pole, for outgoing circuits rated under 200 A in load current

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 11

ammeters 7 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

earth indicating lamp on each pole

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

make of fuses The Fuji Electric Mfg. Co. Ltd., are all fuses labelled yes If circuit breakers are provided for the generators, at what

overload do they operate 50% and at what current do the reversed current protective devices operate 156 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 7.0 V, are the ends of all cables having a sectional

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, 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 In machinery space cables are supported

by steel flat bar, in galley, laundry cabin etc. they are supported by galvanized iron plate and

cable laid under machineries or floor plates or laid on deck are protected by galvanized steel pipe and

cable laid under gang way are protected by steel plating

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

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule yes. Emergency Supply, state position

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 20 AH - 4 sets for interior communication.

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 yes, if so, how are they protected flame proof type approved by authority.

and where are the controlling switches fitted on bridge deck. Are all fittings suitably ventilated yes.

Searchlight Lamps, No. of 6, whether fixed or portable fixed, are they of the carbon arc or of the filament type filament type.

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.

Control Gear and Resistances, and they constructed and fitted as per Rule yes. Lightning Conductors, where required are they fitted as per Rule yes.

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 yes, are all fuses of an Approved Cartridge Type yes, make of fuse Fuji Electric Mfg. Co. Ltd. Japan are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships yes. Are the cables lead covered as per Rule yes.

E. S. D., if fitted state maker Kelvin Hughes location of transmitter Engine room and receiver Chart room.

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	TOKYO SHIBAURA Elect. Co. Ltd.	240	230	1043	500	Diesel engine	Hainan shipbuilders & Engineers
AUX. DIESEL	1	NISHISHIBA DENKI K.K.	40	230	174	600	Diesel engine	Natadoki Seigo K.K.
AUX. RECIPRO	1	"	40	230	174	600	Recipro engine	Ishi Kasekusho
EMERGENCY ROTARY TRANSFORMER	2	TOKYO SHIBAURA Elect. Co. Ltd.	30	115	260	1800	B.C. Motor	Tokyo Shibaura Elect. Co. Ltd.

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	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 ...	240	4	0.3	1043	1480	No. 1. 110 No. 2. 165	Varnished Cambric	lead sheathed & armoured
" " EQUALISER ...		1	"				"	"
Aux Diesel generator	40	1	0.15	174	238	131	"	"
Aux Recipro generator	40	1	"	"	"	135	"	"
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR	38.5	1	0.15	175	238	131	"	"
" " GENERATOR...	35	1	0.25	260	331	131	"	"

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

DESCRIPTION.								
No. 4-4 Section Bd. (For Engine room Ventilator fan)	1	0.06	90	130	30	Varnished Cambric	lead sheathed & armoured	
4-5 " (Boiler fan. Boiler oil pump)	1	"	38	"	72	"	"	
4-6 " (L.O. Transfer pump & oil purifier)	1	"	117.8	"	120	"	"	
4-7 " (F.O. Transfer pump & F.O. service pump)	1	0.15	84	238	69	"	"	
5-4 " (Lathe. Welder crane)	1	0.06	88	130	200	"	"	
5-5 " (F. Water pump & Sanitary pump)	1	"	59	"	360	"	"	
5-6 " (Refrigerating Engine)	1	"	46.6	60	390	Rubber	"	
6-5 " (Nautical instrument)	1	"	36.9	"	600	"	"	
6-6 " (Aft Deck power)	1	"	47.45	"	150	"	"	
6-7 " (Fore Deck power)	1	0.04	10.4	46	600	"	"	
220V Shore connection box	1	0.25	300	331	210	Varnished Cambric	"	
110V "	1	0.15	200	238	210	Rubber	"	

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

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 Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
No. 10-1 Navigation light	1	0.003	1.82	7	750	Rubber	lead sheathed & armoured
No. 10-2 Midship light	1	0.15	78.2	110	600	"	"
No. 10-3 After deck light	1	0.06	98.5	130	120	Cambric	"
No. 10-4 Engine room light	1	0.1	108.3	185	30	"	"
No. 10-5 Cargo light	1	0.06	76.6	130	120	"	"
No. 10-6 Cabine fan	1	0.0145	17.1	27	120	Rubber	"
No. 10-9 Log & battery charge	1	0.0225	24	33	60	"	"
Battery Charge (Fore)	1	0.06	20	60	750	"	"
Wireless	1	0.15	51	110	750	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet)	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or Sq. mm.	In the Circuit.	Rule.			
steering gear	2	20	1	0.06	83	130	480	Cambric	lead sheathed & armoured
Cooling water pump	3	60	1	0.2	225	286	250	"	"
Lub. oil pump	2	110	1	0.4	405	448	300	"	"
Air Compressor	2	100	1	"	370	150	"	"	"
Eng. room Vent. fan	3	7.5	1	0.0225	30	33	240	Rubber	"
Fuel oil pump	1	5	1	"	21	"	150	"	"
Boiler fan	1	20	1	0.06	82	130	70	Cambric	"
Oil purifier	5	3	1	0.01	13	22	60	Rubber	"
oil purifier pump	5	2	1	0.0045	8.8	11	"	"	"
Fuel oil service pump	2	5	1	0.0225	21	33	90	"	"
Lub. oil transfer pump	1	2	1	0.0045	8.8	11	60	"	"
Fuel oil transfer pump	2	15	1	0.06	60	60	60	"	"
General service pump	1	25	1	"	100	130	150	Cambric	"
Eng. turning gear	1	15	1	"	61	83	210	Rubber	"
Crane travel	1	2.5	1	0.04	36	46	45	"	"
Crane hoist	1	6	1	"	36	46	45	"	"
Elect welder machine	1	8	1	"	31	46	70	"	"
Lathe	1	5	1	0.0225	21	33	45	"	"
Sanitary pump	1	7	1	"	29.5	33	32	"	"
Fresh water pump	1	7	1	"	29.5	33	32	"	"
Ref. machine Compressor	2	5	1	"	21	33	18	"	"
" cooling water pump	1	1	1	0.0045	4.6	11	360	"	"
accom. Vent. fan	1	2	1	"	9.2	11	72	"	"
"	1	1.5	1	"	7.1	11	54	"	"
"	1	1.25	1	"	6.3	11	120	"	"
"	1	1	1	"	5	11	84	"	"
Galley turn fan	2	1	1	"	4.8	11	240	"	"
Laundry machine	1	1/2	1	0.003	1.25	7	210	"	"
Bridge fresh water pump	1	1	1	0.0045	4.6	11	30	"	"
Ice box	1	1/2	1	0.003	1.3	7	18	"	"

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.

M. Yoshikawa
THE HARIMA SHIPBUILDING AND
ENGINEERING COMPANY, LTD.

Electrical Contractors.

Date

COMPASSES.

Have the compasses been adjusted under working conditions *yes*

M. Yoshikawa
THE HARIMA SHIPBUILDING AND
ENGINEERING COMPANY, LTD.

Builder's Signature.

Date

Have the foregoing descriptions and schedules been verified and found correct *yes*

Is this installation a duplicate of a previous case *NO* If so, state name of vessel

Plans. Are approved plans forwarded herewith *NO* If not, state date of approval *31-8-51*

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 letters.

The workmanship and material were sound and good. The generators and motors etc have been examined under working condition on full load to Rules' requirements and found satisfactory.

Valid 19.5.52

Total Capacity of Generators *560* Kilowatts.

The amount of Fee ... *£ 2066.00* :
When applied for, :
19 :
When received, :
19 :

Travelling Expenses (if any) £ : :

S. Sumiemon
Surveyor to Lloyd's Register of Shipping.

TUES. 10 JUN 1952

Committee's Minute

Assigned *See F.E. mech. rpt.*