

Rpt. 13.

No. 1138

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

80 DEC 1952

18 DEC 1952

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

No. in Survey held at Nagasaki Date, First Survey 19th Nov 1951 Last Survey 15th May 1952  
Reg. Book. (No. of Visits 20)on the Twin Screw motor vessel "TOMISHIMA-MARU" Tons Gross 2613.89  
Net 4334.47

Built at Nagasaki By whom built Nagasaki Works Mitsubishi Zosen K.K. Yard No. 1426 When built 1952.5 mo.

Owners LINO KAIUN K.K. Port belonging to Tokyo

Installation fitted by Nagasaki Works Mitsubishi Zosen K.K. When fitted 1952.5 mo.

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 Two wire with D.C. Voltage of Lighting 220

Heating 220 Power 220 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 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 230 KW: 1-Starboard aft 2-Port fore aft 40 KW: Port, all on engine room flat

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 Forward center on engine room flat

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 Phenol resin and micanite, 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 For 230 KW: 1200 Amp 2-pole trip free air circuit breaker with

reverse current trip and equaliser links For 40 KW: 250 Amp 2-pole trip free air circuit breaker

and the switch and fuse gear (or circuit breakers) for each outgoing circuit For feeder circuit rated over 200 Amps: 2-pole trip free

air circuit breaker For feeder circuit rated 200 Amps and under: 2-pole knife switch and L.K. type fuse on

each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 8

ammeters 5 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

2-10 watts tungsten filament indicating lamps and megger tester

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

make of fuses Iwami Works Mitsubishi Electric Mfg. Co., are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 25% overload, and at what current do the reversed current protective devices operate 150 Amps

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 10 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

or of the "HR" type State how the cables are supported or protected Group of cable are supported on metallic

hanger and or backed by perforated plate in engine room, etc. Each cable is supported by brass clip and protected

by guard box in cargo space

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. 2-24V 200A for lighting and internal communication. 1-32V 200A 2-8V 200A 2-150A 10A for radio.

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.

and where are the controlling switches fitted. Are all fittings suitably ventilated.

Searchlight Lamps, No. of 1, 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. 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, are 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. 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. Mitsubishi Electric Co. location of transmitter Starboard forward in engine room and receiver. Forward 120-121

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.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN	3	Mitsubishi Electric Mfg. Co.	230	230	1,000	380	Diesel engine	Nagata Iron Works
Aux. EMERGENCY ROTARY TRANSFORMER	1	Mitsubishi Elec. Mfg. Co.	40	230	174	750	Diesel engine	KOGA WORKS EAST JAPANESE INDUSTRY LTD.
	2	Nippon Electric Industry Co.	2 kva	115	10.5	1800	A.C. Motor	Nippon Electric Industry Co.

#### 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	230	2	41/0093"	1,000	605 X 2 1,210	56"	Varnished Cambric	Lead sheathed and armoured
" " EQUALISER		1	91/0093"	500	605	28"	Do.	Do.
Aux. EMERGENCY GENERATOR	40	1	37/0083"	174	386	60	Do.	Do.
ROTARY TRANSFORMER: MOTOR	3.5 H.P.	1	7/0064"	10.5	22	20	Rubber	Do.
" " GENERATOR	2 kva	1	7/0064"	17.5	33	20	Do.	Do.

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

DESCRIPTION.								
No. 1 dist. panel for cargo winch	1	91/0093"	420	605	60	Varnished Cambric	Lead sheathed and armoured	
No. 2 " " " "	2	61/0103"	490	522 X 2 1,044	80	"	do	
No. 3 " " " "	2	61/0093"	404	427 X 2 854	124	"	do	
No. 4 " " " "	1	91/0093"	320	605	70	"	do	
No. 1 power panel board for cooking	1	19/0064"	75	130	90	"	do	
No. 2 " " " for cargo hold fan	1	37/0093"	69	214	46	Rubber	Lead sheathed, armoured and braided	
No. 3 " " " for work shop machine	1	19/0064"	30	60	48	"	do	
No. 4 " " " for engine room auxiliaries	1	19/0064"	26	60	22	"	do	
No. 5 " " " for refrigerating machines	1	61/0103"	412	522	32	Varnished Cambric	Lead sheathed and armoured	
No. 6 " " " for engine room auxiliaries	1	19/0064"	64	130	30	"	do	
No. 7 " " " " " " " "	1	37/0093"	144	155	62	Rubber	Lead sheathed, armoured and braided	
No. 8 " " " " " " " "	1	19/0064"	51	130	60	Varnished Cambric	Lead sheathed and armoured	

#### 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.			
1.75 Kw Toaster + 1.2 Kw Heater	1	7/0052	13.5	27	43	Rubber	Lead sheathed, armoured and braided
1.2 Kw Heater & 600w Electric Iron	1	7/0044	16.4	22	59	"	Lead sheathed and armoured
Navigation Light	1	7/0064	0.9	33	70	"	Lead sheathed, armoured and braided
Signal lamp Projector & Navigation Bridge Light	1	7/0064	12.4	33	90	"	do.
Boat deck Bridge deck light	1	37/0083	80	184	42	"	do
Upper deck light	1	7/0064	17	33	56	"	do
Cargo light	1	19/0064	40	60	56	"	do
Engine room light	1	7/0064	8	33	12	"	do
Cabin fan	1	7/0064	10.5	33	54	"	do
Battery light	1	19/0064	23.5	60	72	"	do
Ship log	1	1/0044	0.8	4	16	"	Lead sheathed and braided
Echo sounder (DC 220V)	1	1/0064	2	7	11	"	Lead sheathed, armoured and braided
Fire detector (DC 220V)	1	1/0064	5	7	11	"	do
Engine telegraph	1	7/0029	6	11	27	"	do
Anchor & docking telegraph	1	7/0029	2	11	26	"	do
Steering telegraph	1	1/0064	2	7	22	"	do
Echo sounder (AC 110V)	1	1/0064	1	7	13	"	do
Gyro pilot (AC 110V)	1	1/0064	3	7	44	"	do
Fire detector	1	1/0044	0.8	4	90	"	Lead sheathed and braided
Signal Bell	1	1/0044	0.8	4	23	"	do
Radar apparatus	1	7/0064	10	33	110	"	Lead sheathed, armoured and braided
Radio apparatus	1	37/0093	130	155	84	"	do
Gyro compass	1	7/0064	14	46	74	"	do
Gyro pilot (DC 220V)	1	7/0064	8	46	210	"	Lead sheathed and armoured

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Engine room ventilation fan	2	8.5	1	19/0064	36	60	120	Rubber
Engine turning gear	2	10	1	19/0064	40	60	80	"
Lub oil purifier	2	3.5	1	7/0064	15	33	24	"
Fuel oil purifier	2	7	1	19/0064	28	60	18	"
Fuel oil clarifier	1	7	1	19/0064	30	60	18	"
Fuel oil service pump	2	4	1	7/0064	17	33	20	"
Lub oil shifting pump	1	4	1	7/0064	17	33	36	"
Fuel injection valve cooling water pump	2	2	1	7/0036	9	17	36	"
Fresh water pump	1	4	1	7/0064	17	33	16	"
Sanitary pump	2	4	1	7/0064	16.5	33	10	"
Fuel oil transfer pump	2	15	1	19/0064	58	130	88	Varnished Cambric
Bilge pump	1	5.5	1	7/0064	23	33	70	Rubber
Fire & general service pump	1	60	1	91/0103	231	334	36	"
Bilge & ballast pump	1	60	1	91/0103	231	334	44	"
Piston cooling oil pump	2	11.5	1	91/0093	435	605	60	Varnished Cambric
Jacket cooling water pump	2	6.5	1	91/0103	245	334	28	Rubber
Steering engine	2	35	1	37/0093	135	155	230	"
Refrigerating compressor	3	2.5	1	37/0093	100	214	38	Rubber
Brine pump	3	5.5	1	7/0064	23.2	46	24	"
Circulating pump	3	3.5	1	7/0044	15	22	46	"
Exhaust fan	2	1.5	1	7/0029	6.6	11	158	"
do	2	4	1	7/0064	17	33	94	"
do	1	5	1	7/0064	21	33	98	"
Elect. welding machine	1	13	1	19/0083	51	118	50	"
overhauling crane	2	6.7	1	19/0083	36.4	118	80	"
work shop machine	1	5	1	7/0064	21	46	18	"
Grinder	1	2	1	7/0064	21.2	46	20	"
Diesel boiler forced draft fan	1	5	1	7/0064	21	33	24	"
Oil burning unit pump	1	1	1	7/0036	4.8	17	48	"
Winchlass	1	90	1	91/0093	340	605	66	Varnished Cambric
5T Cargo winch	6	57	1	37/0083	223	400	30	"
3T Cargo winch	12	33	1	19/0083	130	238	30	"
Mooring winch	1	57	1	37/0083	223	340	50	"
Sounding machine	1	1.5	1	7/0029	7.3	11	82	Rubber
Cooking range blower	2	1	1	7/0029	4.6	11	31	"

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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.

*L. Matsushita*  
NAGASAKI WORKS  
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Electrical Contractors.

Date *10th Dec. 1952*

#### COMPASSES.

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

*L. Matsushita*  
NAGASAKI WORKS  
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Builder's Signature.

Date *10th Dec. 1952*

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 *T.M.T. "ASO-MARU" "PRIMA-MARU"*

Plans. Are approved plans forwarded herewith. *No* If not, state date of approval *Nov. 28, May, 1952*

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 Electric installation of this vessel has been constructed under Special Survey in accordance with the Rules, Approved plans and Secretary's letter. The material and workmanship are satisfactory. The generators and motors etc. have been examined under full loading condition to Rules requirements and found satisfactory.*

Total Capacity of Generators *730* Kilowatts.

The amount of Fee

*290 30 4*  
*9/10/52*  
*W. H. C.*  
*£ 20,400.*

When applied for,

*22 DEC. 1952*  
19

When received,

19

Travelling Expenses (if any) £

*H. Currie Hamada*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

*FRI 16 JAN 1953*

Assigned

*Sir F. E. Mahy, rpt.*



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