

Rpt. 13.

No. 297

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 12 Dec 1953 When handed in at Local Office 19 Port of Kobe Shimomaseki

No. in Survey held at Nagasaki Date, First Survey 2nd April Last Survey 14th Nov 1953
Reg. Book. (No. of Visits 20)

on the Twin Screw motor vessel "Victoria Maru"
Nagasaki Zosen Sho
Built at Nagasaki By whom built Mitsubishi Zosen K.K. Yard No. 1437 When built 1953/1/10
Owners Mitsubishi Kaikan K.K. Port belonging to Tokyo

Installation fitted by Nagasaki Zosen Sho, Mitsubishi Zosen K.K. When fitted 1953/1/10

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 2 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 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 1 set - starboard side aft. and 2 sets - Port side foreaft, on engine room flat
is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury anddamage from water, steam and oil Yes Switchboards, where are main switchboards placed
Forward centre 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
1, 200 Amp 2-pole trip free air circuit breaker with reverse current trip and equalizer links

and the switch and fuse gear (or circuit breakers) for each outgoing circuit

For feeder circuit rated over 200 Amp: 2 pole trip free air circuit breaker

For feeder circuit rated 200 Amp and under: 2 pole knife switch and M.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 4 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 Mitsui Ship Building and Engineering Co., are all fuses labelled Yes If circuit breakers are provided for the generators, at what

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

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 volts, 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 steel plate in eng. 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 Provision Refrigerated chambers, are the cables and fittings as per Rule 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 None.

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 200AH for lighting and interior communication... 1-48V 200AH for radio... 1-216V 12AH for gyro compass...

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... Yes...

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

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... 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, 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... Yes... 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... Nippon Electric Co.... location of transmitter... Store fitted in eng. room (Bd. Enos. 120-121)... and receiver... Store fitted in eng. room (Bd. Enos. 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. Nagasaki	230	230	1000	375	Heavy oil engine	Nagasaki Zosen Sh. Mitsubishi Zosen K.K.
EMERGENCY ...								
ROTARY TRANSFORMER	2	Nippon Electric Industry Co.	10kVA	115	50	1800	D.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	9/0.093	1000	605 x 2 = 1210	56	Varnished Cambric	Lead sheathed and braided.
" " EQUALISER ...		1	9/0.093	500	605	28	Do.	Do.
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR	14 H.P.	1	9/0.064	56	130	52	Varnished Cambric	Lead sheathed and braided.
" " GENERATOR...	10 kVA	1	9/0.064	50	91	52	Do.	Do.

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

DESCRIPTION.								
No. 1 Distribution Panel	1	6/0.093	321	448	55	Varnished Cambric	Lead sheathed and armoured	
No. 2 " "	2	6/0.093	490	522 x 2 = 1044	90	Do.	Do.	
No. 3 " "	2	6/0.093	406	448 x 2 = 892	127	Do.	Lead sheathed and braided	
No. 4 " "	1	6/0.093	320	448	70	Do.	Do.	
Panel circuit for galley & pantry	1	9/0.083	71	185	80	Do.	Do.	
" " " thermotank	1	9/0.052	56	101	80	Do.	Do.	
" " " Cargo hold fan	1	9/0.083	89	185	80	Do.	Do.	
" " " provision ref. machine	1	9/0.052	82	101	36	Do.	Do.	
" " " eng. room 2nd dk.	1	9/0.052	72	101	60	Do.	Do.	
" " " turning gear & crane	1	9/0.083	133	185	72	Do.	Do.	
" " " F.O. Service Pumps etc	1	9/0.052	54	101	70	Do.	Do.	
" " " Purifier	1	37/0.072	139	238	80	Do.	Do.	
" " " eng. room Port auxiliaries	1	9/0.083	77	185	70	Do.	Do.	
" " " " " " "	1	9/0.052	71	101	30	Do.	Do.	

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.			
1.75kW Heater & 1kW Heater	1	7/0.044	125	22	6	Rubber	Lead sheathed and armoured.
1kW Heater	1	7/0.044	9	22	6	"	"
Navigation light	1	7/0.052	0.9	55	82	Varnished Cambric	Lead sheathed and braided.
Signal light, Projector & Nav. bridge light	1	7/0.052	26	55	90	"	"
Living quarter light	1	9/0.083	138	185	60	"	Lead sheathed and armoured.
Boat deck light	1	7/0.052	26	55	30	"	Lead sheathed and braided.
Upper bridge deck light.	1	7/0.064	46	72	25	"	"
Upper deck light	1	7/0.052	26	72	30	"	"
Cargo light main	1	9/0.064	50	130	70	"	"
Do. fore	1	7/0.064	27	33	90	Rubber	"
Do. aft	1	7/0.064	24	33	90	"	"
Eng. room light	1	9/0.052	50	101	20	Varnished Cambric	"
Do.	1	9/0.052	17	52	20	"	"
Battery light	1	9/0.052	20	46	18	"	"
Ship log	1	2c-7/0.004	0.8	4	14	Rubber	"
Echo sounder (B.C. 220V.)	1	2c-7/0.064	0.5	7	12	"	"
Fire detector (B.C. 220V.)	1	2c-7/0.064	4	7	12	"	"
Steering & docking telegraph	1	2c-7/0.029	4	11	100	"	"
Echo sounder (A.C. 110V.)	1	2c-7/0.064	0.15	7	40	"	"
Fire detector power failure alarm	1	2c-7/0.004	0.1	4	3	"	"
Telegraph " " "	1	2c-7/0.004	0.1	4	8	"	"
Gyro pilot " " "	1	2c-7/0.004	0.1	4	3	"	"
Signal bell	1	2c-7/0.004	4	4	300	"	"
Radio apparatus	1	37/0.072	120	238	80	Varnished Cambric	"
Gyro compass	1	7/0.064	10	33	80	Rubber	"
Gyro pilot	1	7/0.064	9	33	210	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Piston cooling oil Pump	2	115	1	9/0.103	435	713	70	Varnished Cambric
Jacket cooling s.w. Pump	2	65	1	9/0.103	245	334	38	Rubber
Bilge & ballast Pump	1	60	1	9/0.103	231	334	49	"
Fire & G.S. Pump	1	60	1	9/0.103	231	334	40	"
F.O. transfer Pump	2	15	1	9/0.052	58	101	90	Varnished Cambric
Electric welder	1	13	1	7/0.064	51	72	72	"
Engine turning gear	2	10	1	7/0.052	40	55	80	"
Eng. room ventilating fan	4	4	1	7/0.064	17	33	94	Rubber
Overhead crane	2	5	1	7/0.052	21	55	60	Varnished Cambric
F.O. Purifier	2	6	1	9/0.052	24	46	24	Rubber
Do	1	6	1	9/0.052	24	46	24	"
Colloidal filter Pump	2	3	1	7/0.064	13	33	28	"
Colloidal washing Pump	1	1	1	7/0.036	5	17	36	"
L.O. Purifier	2	35	1	7/0.064	14	33	14	"
Donkey boiler draft fan	1	5	1	7/0.064	21	33	44	"
Oil burning unit	1	1	1	7/0.029	48	11	20	"
Work shop motor	1	5	1	7/0.064	165	33	14	"
Grinder	1	1	1	7/0.029	48	11	20	"
F.O. service Pump	2	4	1	7/0.064	165	33	14	"
L.O. Shift Pump	1	4	1	7/0.064	165	33	32	"
Fuel injection valve cooling w. Pump	2	2	1	7/0.036	9	17	70	"
Fresh water Pump	1	4	1	7/0.064	165	33	20	"
Sanitary Pump	1	4	1	7/0.064	165	33	24	"
Bilge Pump	1	55	1	7/0.064	224	33	32	"
Steering Tannex Pump	2	35	1	37/0.093	135	331	216	Varnished Cambric
Windlass	1	80	1	37/0.103	305	372	58	"
5 ^{ton} Cargo winch	4	33	1	37/0.083	224	286	20	"
3 ^{ton} Cargo winch	14	57	1	19/0.083	130	185	20	"
Moorings winch	1	57	1	37/0.083	220	286	78	"
Ref. compressor	2	75	1	9/0.052	30	46	16	Rubber
Ref. cooling water pump	2	15	1	7/0.036	66	17	40	"
Cargo hold exhaust fan	2	215	1	7/0.036	67	17	190	"
"	1	2	1	7/0.036	9	17	126	"
"	1	4	1	7/0.064	17	33	130	"
"	1	55	1	7/0.064	23	33	154	"
Thermotank fan	2	6	1	7/0.052	25	55	58	Varnished Cambric

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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 12th Dec. 1953

COMPASSES.

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

Yes

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

Builder's Signature.

Date 12th Dec. 1953

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

AWATAMARU ARITAMARU

Plans. Are approved plans forwarded herewith.....

Yes

If not, state date of approval

30th July 1953

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 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.

noted JS
18/5/54

Total Capacity of Generators 690 ✓ Kilowatts.

The amount of Fee ...

£ 273,000 (Ad/E 12.5.54)

When applied for,
APR - 7 1954
LOCALLY
When received,
19

Travelling Expenses (if any) See Rpt. 1 :

Peter Munson Hamada
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRIDAY 21 MAY 1954

Assigned

See Rpt. 4 & 5