

Rpt. 13.

No. 1172

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 19 When handed in at Local Office 19 Port of Kobe
 No. in Survey held at Nagasaki Date, First Survey 18th Feb. Last Survey 28th Aug 1952
 Reg. Book. (No. of Visits 20)
 on the Twin Screw motor vessel "AWATA MARU"
 Built at Nagasaki By whom built Nagasaki Works, Mitsubishi Zosen K.K. Yard No. 1428 When built 1952 8 Mo.
 Owners Nippon Yusen Kaisha Port belonging to Tokyo
 Installation fitted by Nagasaki Works, Mitsubishi Zosen K.K. When fitted 1952 8 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 One set, starboard and two sets port 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 generator:- 1,200 Amp 2-pole trip free air circuit breaker with reverse current trip and equaliser links

For 40 kw generator:- 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 9
 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 Mitsubishi Electric Mfg 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 1,150 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 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 2 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 *State room & below of Captain and Chief Engineer Radio station, Dining saloon, Engine room, Lavatory, Boat embarkation lamp and Passage*.....

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. *2x 24V. 200A for lighting and internal communication. 1x 22V. 200A. 2x 8V. 200A. 2x 1.5V. 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. *Yes*.....

Searchlight Lamps, No. of *2*....., 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....., 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. *Yes*.....

E.S.D., if fitted state maker. *NIPPON ELECTRIC CO.*..... location of transmitter. *Below 120-121*..... and receiver. *Below 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	375	Diesel engine	Nippon Electric Industry Co. Ltd.
AUXILIARY EMERGENCY	1	Mitsubishi Electric Mfg. Co.	40	230	174	600	Diesel engine	Koga Works, Mitsubishi Nippon Ind. Co. Ltd.
ROTARY TRANSFORMER	2	Nippon Electric Industry Co.	15 kVA	115	130.5	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	1210	58	Varnished cambric	Lead sheathed and armoured.
" " EQUALISER		1	9/0.093	500	605	29	do	do.
AUXILIARY EMERGENCY GENERATOR	40	1	37/0.083	174	286	53	Varnished cambric	Lead sheathed and armoured.
ROTARY TRANSFORMER: MOTOR	25 HP	1	37/235 mm ²	78	214	19	Rubber	do
" " GENERATOR	15 kVA	1	37/235 mm ²	130.5	214	19	do	do

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

DESCRIPTION.								
No. 2 Auxiliary switch board	2	6/0.103	553.1	1426	108	Varnished cambric	Lead sheathed and armoured.	
No. 3 Auxiliary switch board	2	6/0.093	405.2	896	123	do	do	
Panel circuit to workshop machine & grinder	1	19/130 mm ²	30	64	62	Rubber	Lead sheathed, armoured & braided.	
" " oil burning unit, battery for forward fan	1	19/130 mm ²	25.6	64	31	do	do	
" " L.O. purifier, F.O. purifier, F.O. purifier	1	37/235 mm ²	114.4	244	65	do	do	
" " F.O. service pump, L.O. shift pump	1	19/0.064	51	130	65	Varnished cambric	Lead sheathed and armoured.	
" " Refrigerating machine	1	6/0.103	323	522	52	do	do	
" " Galley power etc.	1	19/0.064	64.2	130	87	do	do	
" " Exhaust fan	1	37/235 mm ²	68.2	214	56	Rubber	Lead sheathed, armoured & braided.	
" " Engine room ventilating fan	1	19/0.064	68	83	24	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 K.W. Toaster & 1.2 K.W. Heater	1	7/0.052	13.5	27	48	Rubber	Lead sheathed & armoured.
1.2 K.W. Heater & 600 W. Electric Iron	1	7/1.63	10.9	46	59	do	Lead sheathed, armoured & braided.
Navigation Light	1	7/0.064	28.9	33	90	do	Lead sheathed & armoured.
Signal lamp, Projector & Navigation Bridge Light	1	19/0.052	23.4	46	90	do	do
Boat D ⁵ , Bridge D ⁵ & upper Bridge D ⁵ Light	1	37/2.10	87.5	184	42	do	Lead sheathed, armoured & braided.
Upper D ⁵ Light	1	7/0.064	13.4	33	52	do	Lead sheathed & armoured.
Cargo Light	1	19/0.064	41.4	60	52	do	do
Engine room Light	1	19/0.083	44.3	185	10	Varnished cambric	do
Cabine fan	1	7/0.064	10.7	33	55	Rubber	do
Battery Light	1	7/0.064	23.4	33	72	do	do
Ship Log	1	1/1.2	0.8	7.4	16	do	Lead sheathed & braided.
Echo sounder (D.C. 220 V.)	1	7/0.064	2	7	14	do	do
Fire detector (D.C. 220 V.)	1	7/0.064	5	7	11	do	do
Engine telegraph	1	7/0.029	6	11	27	do	do
Anchor & Docking telegraph	1	7/0.029	2	11	26	do	do
Steering telegraph	1	7/0.029	2	11	22	do	do
Echo sounder (A.C. 110 V.)	1	7/0.064	1	7	13	do	do
Gyro pilot (A.C. 110 V.)	1	7/0.064	3	7	44	do	do
Fire detector	1	7/0.029	2.8	11	90	do	do
Signal bell	1	7/0.064	0.8	4	23	do	do
Radar Apparatus	1	7/0.064	10	33	85	do	do
Radio Apparatus	1	6/2.35	130	288	90	do	Lead sheathed, armoured & braided.
Gyro Compass	1	7/0.064	14	35	75	do	Lead sheathed & armoured.
Gyro Pilot (A.C. 220 V.)	1	7/0.91	8	24	75	do	Lead sheathed, armoured & braided.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Engine room ventilating fan	4	4	1	7/1.63	17	46	131	Rubber
Engine turning gear	2	10	1	19/0.064	40.5	83	78	do
Lub. oil purifier	2	3.5	1	7/1.63	15.2	46	32	do
Fuel oil purifier	2	8	1	19/1.30	31	64	18	do
Fuel oil clarifier	1	8	1	19/1.30	31	64	20	do
F.O. service pump	2	4	1	7/1.63	17	46	22	do
L.O. shift pump	1	4	1	7/1.63	17	46	12	do
Fuel injection valve cooling water pump	2	2	1	7/2.91	9	24	38	do
Fresh water pump	1	4	1	7/1.63	17	46	20	do
Sanitary pump	2	4	1	7/1.63	17	46	32	do
F.O. transfer pump	2	15	1	19/0.064	58	130	60	Varnished cambric
Bilge pump	1	5.5	1	7/1.63	23	46	48	Rubber
Fire & general service pump	1	60	1	9/0.103	231	334	36	do
Bilge & Ballast pump	1	60	1	9/0.103	231	334	40	do
Piston cooling oil pump	2	115	1	9/0.093	435	605	52	Varnished cambric
Tacket cooling sea water pump	2	65	1	9/0.103	245	334	30	Rubber
Steering gear	2	35	1	37/0.093	135	331	208	Varnished cambric
Compressor for refrigerating machine	3	30	1	37/2.35	115	214	12	Rubber
Ref. brine pump	3	7.5	1	19/0.082	31	46	8	do
Ref. condenser pump	3	4	1	7/1.63	16.5	46	35	do
Exhaust fan	2	1.5	1	7/0.029	6.6	11	158	do
do.	2	4	1	7/1.63	17	46	72	do
do.	1	5	1	7/1.63	21	46	87	do
Electric welding machine	1	13	1	19/0.064	51	130	50	Varnished cambric
Engine overhauling crane	2	67	1	19/0.064	28	130	46	do
Work shop machine	1	5	1	7/1.63	21	46	53	Rubber
Grinder	1	1	1	7/0.91	47	24	51	do
Dan Key boiler forced draft fan	1	5	1	7/1.63	21	46	40	do
Oil burning unit	1	1	1	7/0.91	46	24	50	do
Windlass	1	90	1	37/0.103	340	372	9	Varnished cambric
5T Cargo winch	4	57	1	37/0.083	223	286	30	do
3T Cargo winch	14	33	1	19/0.083	130	185	64	do
Hoisting winch	1	57	1	37/0.083	223	286	67	do
Sounding machine	1	1.5	1	7/0.029	6.9	11	82	Rubber
Cooking range blower	2	1	1	7/0.029	5.1	11	31	do

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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.

[Signature]

NAGASAKI WORKS
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Electrical Contractors.

Date 21 Jan. 1953

COMPASSES.

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

[Signature]

NAGASAKI WORKS
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Builder's Signature.

Date 21 Jan. 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 ASAHARI, ARIMAMARU, TAMISHIMAMARU

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

If not, state date of approval Feb. 22 July 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 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.

2nd 9.40.—Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators 720 Kilowatts.

The amount of Fee ... £ 277.000

When applied for, 27. JAN. 1953

LOCALLY

When received,

Travelling Expenses (if any) £

19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute.....

TUES. 24 FEB 1953

Assigned

Su F.E. maly, rpt.



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