

Rpt. 13.

No. 628

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

11/5 APR 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 20th April, 1951 Last Survey 10th Nov. 1951  
 Reg. Book. (No. of Visits 30)  
 on the Steel Twin Screw Motor Vessel ASO MARU  
 Built at Nagasaki By whom built Nagasaki Shipyard & Engine Works. Tons Gross 2,576.88  
 Owners Nippon Yusen K. K. Yard No. 421 Net 4,312.51  
 Port belonging to Tokyo When built 1951 11 mo.  
 Installation fitted by Nagasaki Shipyard & Engine Works When fitted 1951 11 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 system 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 Starboard aft forward & aft Port side in engine room  
 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 in 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, 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 A double pole circuit breaker with overload and reverse current trip, for each generator.  
 A single pole equalizer switch is interlocked with each circuit breaker. The reverse current protection is connected on the positive pole.  
 Volt meter and ammeter for each generator.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit.  
 A circuit breaker for circuit over 200 amperes and enclosed fuses and double pole switch for circuit under  
 200 amperes.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 2  
 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  
 Two 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. Ltd., are all fuses labelled Yes If circuit breakers are provided for the generators, at what  
 overload do they operate 25 50 100 140 % overload, and at what current do the reversed current protective devices operate 150 amperes.

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 3.3 kN/m<sup>2</sup>, 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 No State how the cables are supported or protected

Supported by steel hanger and protected by steel plate or steel pipe

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... Captain's and Chief Engineer's rooms, Engine room, Radio station, Dining saloon, Boat embarkation and passage, and Laboratories...

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 Sets, each 200 Ampere hours...

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 2... 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... 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...

E.S.D., if fitted state maker... Nippon Denki Corp. Ltd.... location of transmitter... Starboard forward in engine room No. 123-124... and receiver... Starboard forward in engine room No. 123-124...

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	Nagasaki Works, Mitsubishi Electric Mfg. Co. Ltd.	230	23	1,000	375	Artesian injection 4 stroke single acting oil engine	Yokohama Shipyard & Engine Works, East Japan Heavy Industries, Ltd.
Auxiliary	1	Do	40	230	174	600	Do.	Do.
EMERGENCY ...	1	Do	40	230	174	600	Do.	Do.
ROTARY TRANSFORMER	2	Nippon Electric Industry Co.	2 KVA	115	10.5	3600	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	1,000	1,210	58	Varnished Cambric	Lead Sheathed and armoured
" " EQUALISER ...		1	9/0.093	500	605	29	do	do.
Auxiliary	40	1	37/0.083	174	286	53	Varnished cambric	do.
EMERGENCY GENERATOR ...	40	1	37/0.083	174	286	53	Varnished cambric	do.
ROTARY TRANSFORMER: MOTOR	3.5 HP	1	7/0.044	10.5	22	19	Rubber	do
" " GENERATOR...	2 KVA	1	7/0.064	17.5	33	19	do.	do.

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

DESCRIPTION.								
To NO. 2 AUXILIARY SWITCHBOARD	2	6/0.103	553.1	1426	108	Varnished-cambric	Lead Sheathed and armoured	
To NO. 3 AUXILIARY SWITCHBOARD	2	6/0.093	405.2	896	123	do	do	
To PANEL CIRCUIT TO WORK SHOP MACHINES & GRINDER	1	19/0.052	34.5	64	62	Rubber	Lead Sheathed, armoured and braided	
" " OIL BURNING UNIT, DONKEY BOILER FORCED FAN	1	19/0.052	25.8	64	31	do	do	
" " L.O. PURIFIER, F.O. PURIFIER, F.O. CLARIFIER	1	37/0.093	117.4	214	65	do	do	
" " F.O. SERVICE PUMP, L.O. SHIFT PUMP	1	19/0.083	51.4	118	65	do	do	
" " REFRIGERATING MACHINES	1	6/0.103	416.1	522	52	Varnished-Cambric	Lead Sheathed and armoured	
" " GALLEY ETC.	1	19/0.064	69.7	83	87	Rubber	do	
" " EXHAUST FAN	1	37/0.093	69.2	214	56	do.	Lead Sheathed, armoured and braided	

#### 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.			
175 K.W. Toaster + 1.2 K.W. Heater	1	7/0.082	135	27	48	Rubber	Lead sheathed, armoured and braided
1.2 K.W. Heater + 600 W. Electric irons	1	7/0.044	16.4	22	59	do.	Lead sheathed and armoured
Navigation light	1	7/0.064	0.89	33	90	do.	Lead sheathed, armoured and braided
Signal lamp, Projector + Navigation Bridge light	1	7/0.064	12.4	33	90	do.	do.
Boat deck, Bridge deck light	1	7/0.083	80	200	42	do.	do.
Upper deck light	1	7/0.064	12	33	52	do.	do.
Cargo light	1	19/0.064	40	60	52	do.	do.
Engine room light	1	19/0.064	42.5	60	10	do.	do.
Cabin fan	1	7/0.064	10.5	33	55	do.	do.
Battery light	1	19/0.064	23.5	60	72	do.	do.
Ship log	1	7/0.044	0.8	4	16	do.	Lead sheathed and braided
Echo sounder (D.C. 220 V.)	1	7/0.064	2	7	14	do.	Lead sheathed, armoured and braided
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	7/0.064	2	7	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	7/0.044	0.8	4	90	do.	Lead sheathed and braided
Signal bell	1	7/0.044	0.8	4	23	do.	do.
Radar apparatus	1	7/0.064	10	33	93	do.	Lead sheathed, armoured and braided
Radio apparatus	1	37/0.093	130	155	90	do.	do.
Gyro Compass	1	7/0.064	14	35	75	do.	do.
Gyro pilot (D.C. 220 V.)	1	7/0.064	8	35	75	do.	Lead sheathed and armoured

#### 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.			
Engine room ventilating fan	2	85	1	19/0.064	36	83	131	Rubber	Lead sheathed and armoured
Engine turning gear	2	10	1	19/0.064	48.5	83	78	do.	do.
L.O. purifier	2	35	1	7/0.064	15.2	46	32	do.	Lead sheathed, armoured and braided
F.O. purifier	2	7	1	19/0.064	28	83	18	do.	Lead sheathed and armoured
F.O. Clarifier	1	31	1	19/0.064	31	83	20	do.	do.
F.O. service pump	2	4	1	7/0.064	17.1	46	22	do.	Lead sheathed, armoured and braided
L.O. Shift pump	1	4	1	7/0.064	17.1	46	12	do.	do.
Fuel valve cooling water pump	2	2	1	7/0.036	8.9	24	38	do.	do.
Fresh water pump	1	4	1	7/0.064	17.0	46	20	do.	do.
Sanitary pump	2	4	1	7/0.064	16.5	46	32	do.	do.
F.O. transfer pump	2	15	1	19/0.083	58	118	60	do.	do.
Bilge pump	1	5.5	1	7/0.064	23	46	48	do.	do.
Fire & general service pump	1	60	1	9/0.103	231	334	36	do.	Lead sheathed and armoured
Bilge & ballast pump	1	60	1	9/0.103	231	334	40	do.	do.
Piston cooling oil pump	2	115	1	9/0.093	43.5	605	52	Varnished-cambric	do.
Jacket cooling sea water pump	2	65	1	9/0.103	24.5	334	30	Rubber	do.
Steering gear	2	35	1	37/0.093	135	331	208	Varnished-cambric	do.
Compressor for refrigerating machine	3	25	1	37/0.093	100	214	12	Rubber	Lead sheathed, armoured and braided
Brine pump for do.	3	5.5	1	7/0.064	23.2	46	8	do.	do.
Condenser cooling pump for do.	3	3.5	1	7/0.044	15.5	22	35	do.	Lead sheathed and armoured
Exhaust fan	2	1.5	1	7/0.029	66	11	158	do.	do.
do.	2	4	1	7/0.064	17.5	46	72	do.	Lead sheathed, armoured and braided
do.	1	5	1	7/0.064	21	46	87	do.	do.
Electric welding machine	1	13	1	19/0.083	51	118	50	do.	do.
Overhauling crane	2	67	1	19/0.083	36.4	118	46	do.	do.
Work shop machine	1	5	1	7/0.064	21.2	46	53	do.	do.
Grinder	1	2	1	7/0.036	9	24	51	do.	do.
Donkey boiler forced draft fan	1	5	1	7/0.064	21	46	40	do.	do.
Oil burning unit	1	1	1	7/0.036	4.8	24	50	do.	do.
Winchlass	1	90	1	7/0.093	340	605	9	do.	do.
5 <sup>th</sup> Cargo winch	6	57	1	37/0.083	223	286	30	Varnished-cambric	Lead sheathed and armoured
3 <sup>rd</sup> Cargo winch	12	33	1	19/0.083	130	185	64	do.	do.
Meerling winch	1	57	1	37/0.083	223	286	67	do.	do.
Sounding machine	1	1.5	1	7/0.029	7.3	11	82	Rubber	do.
Cooking range blower	2	1	1	7/0.029	4.6	11	31	do.	do.

2021

Lloyd's Register Foundation



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.

*H. Jato*  
NAGASAKI SHIPYARD & ENGINE WORKS,  
WEST JAPAN HEAVY-INDUSTRIES, LTD.

Electrical Contractors.

Date 12th Nov. 1951

#### COMPASSES.

Have the compasses been adjusted under working conditions.

*Yes*

*H. Jato*  
NAGASAKI SHIPYARD & ENGINE WORKS  
WEST JAPAN HEAVY-INDUSTRIES, LTD.

Builder's Signature. Date 12th Nov. 1951

Have the foregoing descriptions and schedules been verified and found correct.

*Yes*

Is this installation a duplicate of a previous case.

If so, state name of vessel.

Plans. Are approved plans forwarded herewith.

If not, state date of approval.

27th Sep. 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 Electric Installation of this vessel has been constructed under Special Survey in accordance with the Rules, Approved plans, and Secretary's letter.*

*Materials and workmanship are satisfactory.*

*The generators and motors etc. have been examined under full loading condition to Rule's requirements and found satisfactory.*

*Noted ADM 1-5-52*

Total Capacity of Generators *730* Kilowatts.

The amount of Fee ...

*£330.788*

When applied for,

19

When received,

19

Travelling Expenses (if any) £

*Shunichi Yamada*  
Surveyor to Lloyd's Register of Shipping.

FRI. 6 JUN 1952

Committee's Minute

Assigned

*See F.E. mch. rpt.*



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