

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 14th Aug. 1926 When handed in at Local Office 14th Aug. 1926 Port of NAGASAKI. 17 SEP 1926

No. in Survey held at NAGASAKI. Date, First Survey 10th May 26 Last Survey 7th August 1926

Reg. Book. (Number of Visits 15)
on the Steel Twin Screw Motor Vessel "MONTEVIDEO MARU". Tons { Gross 7,267.
Net 4387.

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Yard No. 412, When built 1926.

Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

Electric Light Installation fitted by Mitsubishi Zosen Kaisha, Ltd., Contract No. _____ When fitted 1926.

System of Distribution Two wire closed circuit.

Pressure of supply for Lighting 225 volts, Heating 225 volts, Power 225 volts.

System of Alternating Current, Lighting Direct Power Direct

Alternating current system, state frequency of periods per second /

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding overload Yes, are they compound wound Yes

Are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator /

If more than one generator is fitted are they arranged to run in parallel Yes, except 3.5 kw, is an adjustable regulating resistance fitted in series with each shunt field Yes

Are all terminals accessible and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited Yes

Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators All on bottom platform of Engine room space.

Is ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

Are generators situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators / and /, are the generators protected from mechanical injury and damage from water, steam or oil Yes

Are their axis of rotation fore and aft Yes

Are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and respective generators in metallic contact Yes

Position of Switch Boards, where placed Fore end of Engine room on 2nd deck level.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

one or more terminals on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard In same compartment.

Are switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes

Are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards / and /

Are they constructed wholly of durable, incombustible non-absorbent materials Yes, is all insulation of high dielectric strength and of

generally high insulation resistance Yes, if semi-insulating material is used, are all conducting parts connected to one pole and insulated from the slab with mica or mica-ite and the slab similarly insulated from its framework No semi insulating material, and is the

effectively earthed Yes. Are the following fittings as per Rule, viz.:— spacing or shielding of live parts

Accessibility of all parts Yes, absence of fuses on back of board Yes, proportion of omnibus

fuses Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 150 KW. & 37.5 KW.

Are generators are each fitted with a double pole circuit breaker with overload and reverse current release together with a single pole equalizer switch interlocked with circuit breaker as per Rule, and an enclosed fuse and knife switch on each pole... 3.5 KW generator fitted with a single pole circuit breaker with overload release plus a double pole knife switch & ... each out-going circuit, a fuse on each pole and a double pole switch.

Are there instruments on main switchboard 8 ammeters 3 voltmeters / synchronising device for paralleling purposes.

Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system By lamps

Are fuses, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

Are main and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes



Insulation of Cables, state type of cables, single or twin Both are the cables insulated and protected as per Tables III or IV of the Rules. **Yes**
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5 volt for power & heat.
 Cable Sockets and other connections, are the ends of all cables having a sectional area of ^{0.04} ~~0.02~~ square inch and above provided with soldering socket **Yes**

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound /
Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage **Yes**

Support and Protection of Cables, state how the cables are supported and protected Clamped to metal brackets or perforated galvanized stl. plate by metal strips & protected by stl. armoring with or without stl. pipes.
 If cables are run in wood casings, are the casings and caps secured by screws **Yes**, are the cap screws of brass **Yes**, are the cables run in separate grooves / . If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI **Yes**
Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements **Yes**

Joints in Cables, state if any, and how made, insulated, and protected Junction boxes are used, insulated by mica. protected by metal box cover.
Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands With water tight glands and Deck tubes.
Bushes in Beams and Non-watertight Positions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed **Yes** state the material of which the bushes are made **Lead sheet.**
Earthing Connections, state what earthing connections are fitted and their respective sectional areas None. except for wireless, telegraph, sectional area 0.00715 sq.in.

are their connections made as per Rule **Yes**
Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule **Yes**
Emergency Supply, state position and method of control of the emergency supply and how the generator is driven Machinery space 3.5 KW. Generator driven by a Hot Bulb Engine.

Navigation Lamps, are these separately wired **Yes**, controlled by separate switch and separate fuses **Yes**, are the fuses double pole **Yes**, are the switches and fuses grouped in a position accessible only to the officers on watch **Yes**, has each navigation lamp an automatic indicator as per Rule **Yes**, are separate screens provided for the use of oil and electric side lights **Yes**, are separate oil lanterns provided for the mast head lights and side lights **Yes**
Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight **Yes**, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected **Lamps in steerage are protected by strong metal guard and casting wood hinged cover.**
 are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected / , how are the cables led

where are the controlling switches situated /

Searchlight Lamps, No. of / , whether fixed or portable / , are their fittings as per Rule /
Arc Lamps, other than searchlight lamps, No. of / , are their live parts insulated from the frame or case / , are their fittings as per Rule /
Motors, are their working parts readily accessible **Yes**, are the coils self-contained and readily removable for replacement **Yes**, are the brushes, brush holders, terminals and lubricating arrangements as per Rule **Yes**, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material **Yes**, are they protected from mechanical injury and damage from water, steam or oil **Yes** are their axis of rotation fore and aft **Yes**, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type **Totally enclosed**, if not of this type, state distance of the combustible material horizontally or vertically above the motors / and / **Yes**

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed as per Rule **Yes**
Lightning Conductors, where lightning conductors are required, are these fitted as per Rule /
Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings. /
 If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office /

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT			Revs. per Min.	DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.			Fuel Used.	Flash Point of Fuel.
MAIN	3	150	225	666	300	2 Cycle Sulzer Diesel	Diesel Oil	185° F
AUXILIARY	1	37.5	225	166	350	" " " "	" "	" "
EMERGENCY	1	3.5	225	15.6	450	2 Cycle Sing. Cylr. Hot Bulb Sulzer Eng.	Kerosene.	120° F
ROTARY TRANSFORMER	1	3	250			5 HP 220 V. 20 Amp. Motor.		
	1	1	100			50 V. 24 Amp. Motor.		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								SEE SEPARATE SHEET.
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT								
	SIDE LIGHTS								
	COMPASS LIGHTS								
	POOP LIGHTS								
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								SEE SEPARATE SHEET.
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	WORKSHOP MOTOR								
	VENTILATING FANS								

Steel Twin Screw Motor Vessel "MONTEVIDEO MARU".

Generator, Lighting, Heating Condensers.

All Conductors are of annealed copper conforming to British Standard Specification No. 7. The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules. The foregoing is a correct description.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAWASAKI, LTD. Electrical Engineers. Date 18 AUG 1926

COMPASSES.

Distance between electric generators or motors and standard compass About 10 feet from Gyro-pilot compass. Distance between electric generators or motors and steering compass About 3 feet. The nearest cables to the compasses are as follows: A cable carrying 0.1 Ampères One foot from standard compass. One foot from steering compass. For Compass light. A cable carrying 1.0 Ampères Twelve feet from standard compass. Three feet from steering compass. For Gyro-pilot motor.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAWASAKI, LTD. Builder's Signature. Date 18 AUG 1926

Is this installation a duplicate of a previous case Yes. If so, state name of vessel M/V "Santos Maru", and M/V "La Plata Maru".

General Remarks (State quality of workmanship, opinions as to class, &c. The materials and workmanship are good and the installation as a whole complies with the Rules, and special instructions & tests have been carried out accordingly and it is the opinion of the undersigned that the vessel be given the highest class. Plans sent under separate cover of: "Load Distribution Diagram", and "Connection Diagram on Main Switchboard".

Total Capacity of Generators 491 Kilowatts

The amount of Fee ... £ 670:60 : 14. 8. 26

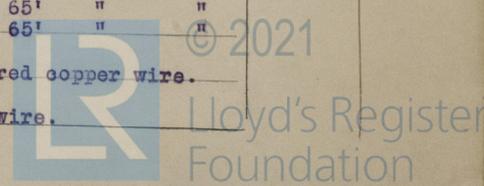
Travelling Expenses (if any) £ : : AUG 21 1926

Committee's Minute TUES. 21 SEP 1926

Assigned

Table with columns: No. Ref., Description, Effective No. of Set, Area of each Conductor, Composition of Strand, Total Maximum Current, Approx Length, Insulated with, How Protected, Remarks. Rows include Main generator, Aux., Emergency generator, Fuse board forward, Fuse box mid winch, Fuse board aft, Cooking fan switch, Baggage lift switch, Junction box ord. fan, Cut out Elec. iron, Junction box laundry motor, Junction box ref. motor, Junction box oil pump, Auxiliary switch board, Fore Cargo lamp, Socket for above, Midship cargo lamp, Socket for above, Submain board S 6, Aft cargo lamp, Socket for above, Aft cargo lamp, Socket for above, Submain board S 7, 1 KW. Elec. heater social hall, 1.5 KW. Elec heater social hall, Submain board S 10, 2 KW. Elec heater smoke room, 1.5 KW. Elec Heater smoke room, Submain board S 11, Distributing board No. 1, Submain board No. S 1, Distributing board No. 7, Submain board No. S 3, Distributing board No. 18, Submain board No. S 4, Distributing board No. 21, 500 watt lamp socket, 500 watt lamp, Submain board No. S 5, Navigation sig. Indicator, Distributing board No. 23, Cut out, Distributing board No. 24, Submain board No. S 8, Distributing board No. 25, Submain board No. S 9, 150 KW. generator, 87.5 KW. generator.

L.A.W. = Lead covered & armoured copper wire. F.C. = Flexible Cord. L.W. = Lead covered copper wire.



Steel Twin Screw Motor Vessel "MONTEVIDEO MARU"

Motor Conductors.

Ref.No.	Description.	Effective No. of Set.	Area of each Cond'sr Sq.in.	Composition of Strand		Total Maximum current Amperes.	Approx Length (Lead & Return) feet.	Insula- ted with	How protec- ted	Re- Marks.
				No.	Dia.					
6	Windlass	1	.406 ✓	61	.092"	216	140'	Rubber	L.A.W.	
7-12	Winches foreward	6	.119 ✓	37	.064"	111	65'	"	"	
14,15	" midship	2	" ✓	"	"	"	30'	"	"	
17.20	" aft	4	" ✓	"	"	"	35'	"	"	
21	Warping winch	1	.186 ✓	"	.08"	145	120'	"	"	
28-30	Ventilator fan	3	.00715 ✓	7	.036"	8.5	180'	"	"	
26	Baggage lift	1	" ✓	7	"	5.1	12'	"	"	
23.24	Cooking range fan	2	" ✓	"	"	4.7	23'	"	"	
37	Washing machine	1	" ✓	"	"	12.7	"	"	"	
36	Hydroextrator	1	" ✓	"	"	20!	8'	"	"	
32-34	Electric iron	3	.00322 ✓	1	.064"	9	10'	"	"	
39.40	Steering engine	2	.119 ✓	37	"	97	350'	"	"	
41.42	Ref.Machine	2	.186 ✓	"	.08"	124	12'	"	"	
43.44	Brine pumps	2	.00715 ✓	7	.036"	20.5	12'	"	"	
48	Gyro pilot	1	.00322 ✓	1	.064"	1.35	250'	"	"	
46	Gyro compass	1	.00715 ✓	7	.036"	4	130'	"	"	
47	Wireless telegraph	1	" ✓	7	"	20	240'	"	"	
48.49	Turbo blower	2	.605x2 ✓	91x2	.092"	845	35'	"	"	
50.51	Aux. air comp.	2	.405x2 ✓	61x2	"	528	55'	"	"	750 Amp. (Max. in service)
52	Work shop motor	1	.00715 ✓	7	.036"	21.5	70'	"	"	
53.54	Oil pump	2	" ✓	7	"	4.78	20'	"	"	
55.56	Oil purifier	2	" ✓	7	"	8	20'	"	"	
58.68	Jacket cool. water pump	2	.119 ✓	37	.064"	86	90'	"	"	
59.69	Piston cool. W. pump	2	.0344 ✓	19	.048"	58	85'	"	"	
60.70	Bilge pump	2	.0127 ✓	7	.048"	27.4	35'	"	"	
61.71	Lub. oil pump	2	" ✓	7	"	35	85'	"	"	
62.72	Fuel oil pump	2	.00715 ✓	7	.036"	17.2	110'	"	"	
63	Ballast pump	1	.119 ✓	37	.064"	134	50'	"	"	
64	Cold sanitary pump	1	.0344 ✓	19	.048"	56	50'	"	"	
65	Aux. Eng. Jacket C.W.P.	1	.00715 ✓	7	.036"	14.2	90'	"	"	
66	Lub. oil purifier	1	" ✓	7	"	12.3	95'	"	"	
73	General serv. pump	1	.186 ✓	37	.08"	154	40'	"	"	
74	Hot sanitary pump	1	.0225 ✓	7	.064"	36	40'	"	"	
75	Fresh water pump	1	.00715 ✓	7	.036"	13.2	140'	"	"	
76	Aux. Eng. Lub. Oil pump	1	" ✓	7	"	16	95'	"	"	
78	Motor siren	1	.0127 ✓	7	.048"	32	430'	"	"	

W. Kimber