

Rpt. 13.

No. 1823

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 6th April 1932 When handed in at Local Office 6th April 1932 Port of NAGASAKI. Received at London Office 9 MAY 1932

No. in Survey held at NAGASAKI. Date, First Survey 19th Jany. Last Survey 24th March 1932.  
Reg. Book. (Number of Visits 8)

42659 on the Steel Twin Screw Steamer "USSURI MARU".  
in Sup.

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Yard No. 500 When built 1932-3mo  
Tons { Gross 6385.57  
Net 3789.10

Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka. Japan.

Electric Light Installation fitted by Mitsubishi Zosen Kaisha, Ltd. Contract No. - When fitted 1932

System of Distribution Two wire system.

Pressure of supply for Lighting 110 volts. Heating 110 volts. Power 110 volts.

Direct or Alternating Current, Lighting Direct current Power Direct current

If 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 rating Yes, are they compound wound Yes

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

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

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

Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators Main engine room, Starboard side - 2nd Deck.

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

if 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 axes of rotation fore and aft Yes

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

Main Switch Boards, where placed Main engine room. 2nd Deck - Starboard side. aft.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard /

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, non-ignitable non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes

and is the frame effectively earthed Yes. Are the fittings as per Rule regarding:— spacing or shielding of live parts Yes, accessibility of all parts Yes, absence of fuses on back of board Yes, proportion of omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches A double pole circuit breaker with overload release, reverse current trip and time-lag device and single pole equalizer switch interlocked with the circuit breaker as per rule, and a double pole knife switch for each generator: A double pole knife switch and enclosed fuse on each pole for each out going circuit.

Instruments on main switchboard 3 ammeters 2 voltmeters / synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Lamp.

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

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes

**Cables:** Single, twin, concentric, or multicore Single or Multicore are the cables insulated and protected as per Tables IV or V of the Rules Yes  
**Full of Pressure,** state maximum between bus bars and any point of the installation under maximum load 5.1 volt for Lighting. 6.9 volt for Power.  
**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets 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 galvanized perforated steel plate by metal clips and protected by steel armouring or steel pipe where necessary.  
 If cables are run in wood casings, are the casings and caps secured by screws /, are the cap screws of brass /, 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 VIII 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 /  
**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes  
**Bushes in Beams and Non-watertight Partitions,** 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  
**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas There is no earthing connection except that for wireless telegraph which has sectional area of 0.00715 sq. inches.  
 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 /  
**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  
**Secondary Batteries,** are they constructed and fitted as per Rule 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 Protected by strong metal guards.  
 are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected /  
 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 axes 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 /, if not of this type, state distance of the combustible material horizontally or vertically above the motors / and /  
**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted 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 /

See 6  
 See 3  
 See 4

**PARTICULARS OF GENERATING PLANT.**

DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	25	110	228	600	Steam Engine.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

**LIGHTING AND HEATING CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...								
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	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. Ampères.	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								
	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—								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS								

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 KAISHA, LTD.

*[Signature]*  
 GENERAL MANAGER.

Electrical Engineers. Date APR 15 1932

COMPASSES.

Distance between electric generators or motors and standard compass 70 feet from Motor-Generator for Wireless Telegraph.

Distance between electric generators or motors and steering compass 70 feet from Motor-Generator for Wireless Telegraph.

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 Ampères 1 feet from standard compass 1 feet from steering compass.

A cable carrying / Ampères / feet from standard compass / feet from steering compass.

A cable carrying / Ampères / feet from standard compass / feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted Yes

The maximum deviation due to electric currents was found to be Nil degrees on Any and every course in the case of the standard compass, and Nil degrees on Any and every course in the case of the steering compass.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

*[Signature]*  
 GENERAL MANAGER.

Builder's Signature. Date APR 15 1932

Is this installation a duplicate of a previous case Yes If so, state name of vessel "Ural Maru" Nag.Rpt No.1676.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good and the installation has been fitted in accordance with the Rules, tested under full working conditions and found satisfactory.

Plans sent under separate cover of:- Wiring Diagram of Power. Lighting & Cabin Fan.

It is submitted that  
 this vessel is eligible for  
 THE RECORD.

*elec. light*  
*JA 145732*

Total Capacity of Generators 75 Kilowatts.

The amount of Fee ... £ 340:80 : When applied for. 24. 3. 1932

Travelling Expenses (if any) £ : When received. 28. 3. 1932

*[Signature]*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 13 MAY 1932

Assigned *Elec. Light*

The Surveyors are requested not to write on or below the space for Committee's Minute.

Rpt. No.

Port of NAGASAKI.

Continuation of Report No. 823 dated 6th April 1932 on the

Steel Twin Screw Steamer "USSURI MARU".

LIGHTING & HEATING CONDUCTORS.

Ref. No.	Description.	No. of Cond.	Effective Area of Each Cond. Sq. Ins.	Composition of Strand		Total Maximum Current Amperes	Approximate Length (L & R) feet	Insulated with	How Protected
				No.	Dia.				
1	No.2 Dynamo	2	.40551	61	.092	228	95	Rubber	Lead covered and armoured
2	Equalizer	1	"	"	"	"	47	"	"
6	Fuse box icecream freezer	2	.01267	7	.048	24.5	240	"	"
8	1.76 KW Electric toaster	2	.00713	7	.036	16	80	"	"
9	Wireless switchboard	2	.01267	7	.048	19	260	"	"
10	Secondary battery	2	.00701	7	.036	19	10	"	Lead covered.
12	1 KVA Gen. for Wireless Tel.	2	"	7	"	10	100	"	L.C & A.
14	1/2 KVA Gen. for "	2	"	7	"	2.5	100	"	L.C & A.
18	Shore connection	2	.06	19	.064	"	200	"	Lead covered
19	No.1 Main distribution board	2	.1168	37	"	92.3	230	"	L.C & A.
20	No.1 Submain board	2	.03438	19	.048	44.5	150	"	Lead covered
21	No.2 " "	2	"	"	"	47.8	4	"	"
22	No.1 Dist. board	2	.00701	7	.036	15	100	"	"
23	No.2 " "	2	"	7	"	20.4	4	"	"
24	No.3 " "	2	"	7	"	9.1	4	"	"
25	No.4 " "	2	"	7	"	12.5	4	"	"
26	No.5 " "	2	"	7	"	10.7	4	"	"
27	No.6 " "	2	"	7	"	10.8	4	"	"
28	No.7 " "	2	"	7	"	13.8	4	"	"
29	No.3 Submain board	2	.02214	7	.064	31.5	180	"	L.C & A.
30	No.8 Dist. board	2	.00701	7	.036	7.9	4	"	Lead covered
31	No.9 " "	2	"	7	"	10.4	20	"	"
32	No.10 " "	2	"	7	"	13.2	4	"	"
33	No.4 Submain board	2	.02214	7	.064	38.6	180	"	L.C & A.
34	No.11 Dist. board	2	.01267	7	.048	13.8	250	"	Lead covered
35	No.12 " "	2	.00701	7	.036	14.8	4	"	"
36	Socket for Kinetograph	2	.00322	1	.064	10	4	"	"
37	No.5 Submain board	2	.03438	19	.048	48.6	130	"	L.C & A.
38	No.13 Dist. board	2	.00701	7	.036	10.7	250	"	Lead covered
39	No.14 " "	2	"	7	"	7.4	4	"	"
40	No.15 " "	2	"	7	"	8.4	70	"	"
41	No.16 " "	2	"	7	"	9.5	300	"	"
42	No.17 " "	2	"	7	"	12.6	230	"	"
43	No.2 Main Dist. board	2	.1168	37	.064	95.4	130	"	L.C & A.
44	No.6 Submain board	2	.06112	19	"	61.9	70	"	Lead covered
45	No.7 " "	2	.01267	7	.048	33.5	4	"	"
46	No.18 Dist. board	2	.00701	7	.036	13.2	200	"	"
47	1 K.W. Electric heater	2	"	7	"	10.4	370	"	"
48	No.19 Dist. board	2	"	7	"	10.8	60	"	"
49	No.20 " "	2	"	7	"	12.2	4	"	"
50	No.21 " "	2	"	7	"	9.7	250	"	"
51	Cut-out for 3rd Cl. day light	2	.00322	1	.064	5.6	120	"	"
52	No.22 Dist. board	2	.00701	7	.036	16.1	4	"	"
53	No.23 " "	2	"	7	"	17.4	4	"	"
54	No.8 Submain board	2	.01267	7	.048	29.8	40	"	L.C & A.
55	No.24 Dist. board	2	.00701	7	.036	11.2	4	"	"
56	No.25 " "	2	"	7	"	4.4	4	"	"
57	No.26 " "	2	"	7	"	14.2	4	"	"
58	Cut-out for Eng. Rm. Bus-bar lamp	2	.00181	1	.048	2.2	40	"	"
59	No.3 Main dist. board	2	.02214	7	.064	31.2	130	"	"
60	No.9 Submain board	2	.00701	7	.036	15.6	120	"	Lead covered
61	No.10 " "	2	"	7	"	15.6	100	"	"
62	Fore mast cargo lamp	2	.00181	1	.048	6	15	"	L.C & A.
63	No.1 hatch cargo cluster	2	"	1	"	4.8	20	"	"
64	Flex. cord for cargo lamp	2	.00475	168	.006	3	160	"	Hemp braided flexible cord
65	" " " cluster	2	"	"	"	2.4	160	"	"
66	Main mast cargo lamp	2	.00181	1	.048	6	20	"	L.C & A.
67	No.4 hatch cargo cluster	2	"	1	"	4.8	20	"	"
68	Flex. cord for cargo lamp	2	.00475	168	.006	3	160	"	H.B.F.C.
69	" " " cluster	2	"	"	"	2.4	160	"	"
70	Navigation lamp	2	.00701	7	.036	3.2	440	"	L.C & A.
71	Fore mast lamp	4	.00322	1	.064	.6	580	"	"
72	Starboard side lamp	4	"	1	"	.6	120	"	"
73	Port side lamp	4	"	1	"	.6	40	"	"
74	Main mast lamp	4	"	1	"	.6	700	"	"
75	Stern lamp	4	"	1	"	.6	700	"	"
76	No.11 Submain board	2	.03438	19	.048	55	120	"	"
77	No.27 Dist. board	2	.00322	1	.064	7	180	"	Lead covered
78	No.28 " "	2	"	1	"	10.85	100	"	"
79	No.29 " "	2	"	1	"	6	220	"	"
80	No.30 " "	2	"	1	"	8	60	"	"
81	No.31 " "	2	"	1	"	5.25	220	"	"
82	No.32 " "	2	"	1	"	4.9	80	"	"
83	No.33 " "	2	.00701	7	.036	13	4	"	"

MOTOR CONDUCTORS.

3	Fuse box for Ord. fan motor	2	.1168	37	.064	90	180	"	L.C & A.
4	No.1 2HP Ord. fan motor	2	.00701	7	.036	20	240	"	Lead covered
5	No.1 2.5HP Ord. fan motor	2	.01267	7	.048	25	340	"	"
7	1 HP Icecream freezer motor	2	.00713	7	.036	8.5	10	"	"
11	Motor for 1 KVA. Generator	2	.00701	7	"	17	100	"	L.C & A.
13	Motor for 1/2 KVA. Generator	2	"	7	"	19	100	"	"
15	3HP Turbine turning motor	2	.01267	7	.048	31	140	"	"
16	1.6HP Lub. oil purifier motor	2	.00701	7	.036	14.5	128	"	"
17	2 HP Eng. Rm. Vent. fan motor	2	"	7	"	20	50	"	"

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