

Rpt. 13.

No. 4231

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 15<sup>th</sup> October 1928. When handed in at Local Office 10 Port of **YOKOHAMA** Received at London Office 20 NOV 1928

No. in Survey held at **Uraga** Date, First Survey 1<sup>st</sup> September Last Survey 11<sup>th</sup> October 1928  
Reg. Book. on the **Steel S.S. "CANTON MARU"** (Number of Visits 6)

Built at **Uraga** By whom built **Uraga Dock Co. Ltd.** Yard No. **329** Tons { Gross 2811.32 Net 1613.75  
When built 1928

Owners **Usaka Shosen Kaisha** Port belonging to **Osaka**

Electric Light Installation fitted by **Uraga Dock Co. Ltd.** Contract No. **329** When fitted 1928.

System of Distribution **Two wire parallel system.**

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

Direct or Alternating Current, Lighting **Direct** Power

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 overload **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 **No**, 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, or short circuited **Yes**. Are the lubricating arrangements of the generators as per Rule **Yes**.

Position of Generators **Bottom engine room platform, Starboard side.**

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 axis 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 **Direct coupled.**

Main Switch Boards, where placed **Bottom engine room platform, after side of Generators.**

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, incombustible 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 connected to one pole insulated from the slab with mica or micaite and the slab similarly insulated from its framework  and is the frame effectively earthed **Yes**.

Are the following fittings as per Rule, viz.:— spacing or shielding of live parts  accessibility of all parts  absence of fuses on back of board  proportion of omnibus bars  individual fuses to voltmeter, pilot or earth lamp  connections of switches

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches **Single pole overload circuit breaker; double pole main switch with fuse and double pole change over switch with fuse for outgoing circuit. Equalizer switches not fitted.**

Instruments on main switchboard **2** 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 **Earth lamps and change over switch**

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

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



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**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 2 volts.

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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 yes.

**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 metal clips.

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 yes. 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.

**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 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.

**Earthing Connections**, state what earthing connections are fitted and their respective sectional areas copper wire, sectional area .007". are their connections made as per Rule.

**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 yes.

**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 no. are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected no. how are the cables led where are the controlling switches situated yes.

**Searchlight Lamps**, No. of none, whether fixed or portable yes, are their fittings as per Rule yes.

**Arc Lamps**, other than searchlight lamps, No. of yes, are their live parts insulated from the frame or case yes, are their fittings as per Rule yes.

**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 yes. if not of this type, state distance of the combustible material horizontally or vertically above the motors yes 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 yes.

**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 yes. If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office yes.

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	2	15 each	110	137	600	Steam Reciprocating Engine.		
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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2 Single	.1527	150	.036	160	118	Rubber	Lead & armoured covered.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM		.0032	1	.064	12.9	1700		
	BOILER ROOM		.0032	1	.064	12.9	1010		Lead & armoured covered.
	WIRELESS	2 Single	.0153	15	.036	40	250		Lead & armoured covered.
	SEARCHLIGHT								do.
	MASTHEAD LIGHT	2	.0032	1	.064	12.9	994		do.
	SIDE LIGHTS	4	.0032	1	.064	12.9	196		Lead covered.
	COMPASS LIGHTS	2	.0032	1	.064	12.9			do.
	POOP LIGHTS	1	.0032	1	.064	12.9	418		Lead & armoured covered.
	CARGO LIGHTS	2	.0153	15	.036	40	296		do.
	ARC LAMPS	4	.0032	1	.064	12.9	885		Lead covered.
	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								
	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								

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.

*H. Fujisaki*

Electrical Engineers.

Date *31 October 1928*

**COMPASSES.**

Distance between electric generators or motors and standard compass *67 feet from wireless motor generators.*

Distance between electric generators or motors and steering compass *93 feet from main generators.*

The nearest cables to the compasses are as follows:—

A cable carrying *10* Amperes *18.5* feet from standard compass  feet from steering compass.

A cable carrying *4* Amperes *21* feet from standard compass  feet from steering compass.

A cable carrying *.4* Amperes *6* 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

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

*[Signature]*

Builder's Signature.

Date *31 October 1928*

Is this installation a duplicate of a previous case *no* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *The electric light installation of this vessel has been fitted in accordance with the Society's Rules. It has been tested under service conditions and found satisfactory.*

*It is submitted that this vessel is eligible for THE RECORD*  
*Electric Light*  
*DA 22/11/28*

Total Capacity of Generators *30* Kilowatts

The amount of Fee ... *£240<sup>00</sup>* : When applied for, *15-10-1928*

Travelling Expenses (if any) £ : : When received, *3-1-1929*

*J. Brooke Smith*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 27 NOV 1928*

Assigned *Electric Light*

Im. 9.22.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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