

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 12-12-1929 When handed in at Local Office 12-12-1929 Port of Yokohama Received at London Office 8 JAN 1930

No. in Survey held at Yokohama Date, First Survey 3-9-29 Last Survey 28-11-1929  
Reg. Book. (Number of Visits 9)

on the Steel Screw Motor Vessel "SYDNEY MARU"

Tons Gross 5436  
Net 3234

Built at Yokohama By whom built Yokohama Dock Co. Yard No. 173 When built 1929

Owners Osaka Shosen Kaishiki Kaisha Port belonging to Osaka

Electric Light Installation fitted by Yokohama Dock Co. Contract No. 173 When fitted 1929

Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution Two Wire system

Pressure of supply for Lighting 100 volts, Heating ✓ volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct Power Direct

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 Bottom platform Engine Room. One port side, 2 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 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 Bottom platform of Engine Room. Port side

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 ✓

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

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

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches Triple Pole circuit

breaker with overload and reverse current trips, and a single pole equalizer switch. For outgoing circuit: Double pole single throw switches with fuses.

Instruments on main switchboard Seven ammeters Five 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

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



*Power Single Twin See Lto 24/7/20*  
**Cables:** *Single, twin, concentric, or multicore* are the cables insulated and protected as per Tables IV or V of the Rules *yes*.  
**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *5 Volts*.  
**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 *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 Ranges & Steel Clips*.  
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  
*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 *✓*.  
**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 *With 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 *Gas proof fittings*, how are the cables led *Steel tubes*, where are the controlling switches situated *Outside the spaces*.  
**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 *yes*, 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 *✓*.

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	100	225		390	Diesel Engine	Larakan Oil	88°C.	
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER	2	10	100	100	1400	D.C. motor.			

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.40640	61	.093	444	464	380	Paper	Lead & Armoured
EQUALISER CONNECTIONS	1	.24650	37	.093	✓	343	190	"	"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR	1	.11680	37	.064	68	130	150	Rubber	"
ROTARY TRANSFORMER GENERATOR	1	.11680	37	.064	100	150	150	"	"
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
WIRELESS	1	.01046	4	.044	19	31	1,500	Rubber	"
SEARCHLIGHT	1	.00322	1	.064	4	12.9	600	"	"
MASTHEAD LIGHT	1	.00152	1	.044	4	6.1	40	"	"
SIDE LIGHTS	1	.00152	1	.044	1	6.1	300	"	"
COMPASS LIGHTS	1	.00322	1	.064	4	12.9	600	"	"
POOP LIGHTS	1	.00322	1	.064	2	12.9	20	"	"
CARGO LIGHTS	1	.00322	1	.064	2	12.9	20	"	"
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.									
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.		
BALLAST PUMP									
MAIN BILGE LINE PUMPS	1	1	.02214	4	.064	35	46	250	Rubber Lead & Armoured
GENERAL SERVICE PUMP	1	1	.10090	19	.083	100	118	240	"
EMERGENCY BILGE PUMP									
SANITARY PUMP									
CIRC. SEA WATER PUMPS	2	1	.19640	37	.083	145	184	250	"
CIRC. FRESH WATER PUMPS									
AIR COMPRESSOR	2	1	.19640	37	.083	140	184	230	"
FRESH WATER PUMP									
ENGINE TURNING GEAR	1	1	.01462	4	.052	30	37	430	"
ENGINE REVERSING GEAR									
LUBRICATING OIL PUMPS									
OIL FUEL TRANSFER PUMP	2	1	.2214	4	.064	35	46	320	"
WINDLASS	1	1	.40640	61	.093	120	288	1000	"
WINCHES, FORWARD	6	2	.24650	37	.093	360	464	1000	"
WINCHES, AFT	6	2	.24650	37	.093	360	464	1100	"
STEERING GEAR—									
(a) MOTOR GENERATOR									
(b) MAIN MOTOR	1	1	.0600	19	.064	50	83	1300	"
WORKSHOP MOTOR									
VENTILATING FANS	2	1	.01046	4	.044	28	31	800	"



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.

R. Miyake

Electrical Engineers.

Date 11<sup>th</sup> Dec. 1929

#### COMPASSES.

Distance between electric generators or motors and standard compass 300 ft.

Distance between electric generators or motors and steering compass 400 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères 30 feet from standard compass 20 feet from steering compass.

A cable carrying 10 Ampères 30 feet from standard compass 30 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 with.

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted no.

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.

J. Tsuchiya

Builder's Signature.

Date 11<sup>th</sup> Dec. 1929.

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 Installation of this vessel has been constructed in accordance with the Rules and on completion of fitting onboard was tested under full working conditions with satisfactory results.

It is submitted that  
this vessel is eligible for  
THE RECORD

Elec. Light

J.M.

27/1/30

Total Capacity of Generators 300 Kilowatts.

The amount of Fee £583.00

When applied for,

17-12-29

When received,

11-3-30

Travelling Expenses (if any) £

J. Micholas.  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FBI 17 JAN 1930

Assigned

Elec Light



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Foundation