

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 MAY 1931

Date of writing Report 23-4-1931 When handed in at Local Office 27-4-1931 Port of

No. in Survey held at Jama. Date, First Survey 9-12-30. Last Survey 25-3-1931.

Reg. Book.

on the Steel Single Screw Motor Ship "SHOHEI MARU" Tons { Gross 7256.

Built at Jama. By whom built Mitsui Bussan Kaisha Yard No. 180 When built 3-1931.

Owners Shimatani Kisen Kab. Kaisha Port belonging to Kobe.

Electric Light Installation fitted by Mitsui Bussan Kaisha Contract No. 180. When fitted 1931.

System of Distribution

Two wire closed circuit.

Pressure of supply for Lighting 220 volts, Heating 220. 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.

Position of Generators All on bottom of eng. rm; one 100 K.W. 66 K.W. on Stbd side; one 100 K.W. on port 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 body-labs 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 In engine room bottom floor, port side, after end.

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 (Bakelite board), if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite 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, 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. Each generator fitted with double pole switch, double pole circuit breaker with over load + reverse release + equalizer leads suitable interlocked to the circuit breaker as per rules.

Instruments on main switchboard 5 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. 2 lamps + switch.

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 Bath 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
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 not used
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 by brass clips, protected by galvanized piping on weather deck
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 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 Cast iron joint Box
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 bushes
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 Small 12 volt secondary battery sufficient for 4 lamps, charged by 220 volt source
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 (Chart house), 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 where 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 not fitted, 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 fitted 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 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 ✓
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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN ...	2	100	220	454.5	300	Diesel Engine	Diesel oil	above 150° F.	
AUXILIARY ...	1	66	220	300.0	300	"	"	"	"
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 ^{100 K.W.}	2	2 x 0.308	2 x 300	SWG 20#	454.5	160	Rubber	Armoured.
	EQUALISER CONNECTIONS ^{66 K.W.}	1	2 x 0.152	2 x 150	"	300.0	160	"	"
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
3	AUXILIARY SWITCHBOARDS	1	0.152	150	20#	150	120	Rubber	Armoured
	ENGINE ROOM ^{PORT STABD.}	1	0.007	7	20#	12	130		
	BOILER ROOM								
	ACCOMMODATION	1	0.015	15	20#	15	120		
4	Aux. S.W. BP	1	0.254	250	20#	200	100	Rubber	Armoured.
5	"	1	0.152	150	20#	130	80	"	"
	Navigation light main	1	0.003	1	16#	1	200	"	"
13	Bath heater	1	0.061	60	20#	70	120	Rubber	Armoured.
14	WIRELESS	1	0.015	15	20#	25	180	"	"
	SEARCHLIGHT								
	MASTHEAD LIGHT	3 core	0.0018	1	18#	0.3	580	"	"
	SIDE LIGHTS	3 "	0.0018	1	18#	0.3	100	"	"
	COMPASS LIGHTS	1	0.0018	1	18#	0.3	50	"	"
	POOP LIGHTS	3 core	0.0018	1	18#	0.3	600	"	"
	CARGO LIGHTS (Fore)	1	0.015	15	20#	14	480	"	"
	" (Aft)	1	0.007	7	20#	10	300	"	"
12	HEATERS (Room)	1	0.112	110	20#	130	120	"	"
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.				
3	BALLAST PUMP	1	0.061	60	SWG 20#	76	40	Rubber	Armoured.
3	MAIN BILGE LINE PUMPS	1	0.03	30	"	40	18	"	"
4	Oil Purifier Motor	1	0.007	7	"	12	16	"	"
4	General Service Pump	1	0.003	1	16#	2	16	"	"
5	Oil Purifier Motor	1	0.003	1	16#	8	10	"	"
5	General Service Pump	1	0.003	1	16#	1	10	"	"
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	0.003	1	16#	6	60	"	"
3	ENGINE TURNING GEAR	1	0.0153	15	20#	32	80	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP	1	0.03	30	20#	36	160	"	"
6	WINDLASS	1	0.254	250	20#	240	580	"	"
8	WINCHES, FORWARD (Nos. 1 & 2)	2	2 x 0.254	2 x 250	20#	600	480	"	"
9	WINCHES, AFT (Nos. 3 & 4)	2	2 x 0.254	2 x 200	20#	480	300	"	"
7	STEERING GEAR—								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR	1	0.061	60	20#	72	400	"	"
3	WORKSHOP MOTOR	1	0.003	1	16#	8	20	"	"
	VENTILATING FANS								
2	Comb. Cooling Water & Lub. Oil Motor	1	0.203	200	20#	160	60	"	"
1	Supercharger blower motor	1	0.305	300	20#	220	240	"	"
10	Poop winch	1	0.305	300	20#	360	400	"	"
4	Oil Purifier heater	1	0.081	80	20#	95	20	"	"
4	" settling tank heater	1	0.081	80	20#	82	140	"	"
3	Lub. oil purifier heater	1	0.081	80	20#	95	10	"	"
3	" settling tank heater	1	0.03	30	20#	27	80	"	"
11	Winch (Nos. 3 & 4)	1	2 x 0.254	2 x 250	20#	600	300	"	"

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.

J. P. Ramo

Electrical Engineers.

Date April 1st 1931.

COMPASSES.

Distance between electric generators or motors and standard compass Motor to standard compass 45 ft.

Distance between electric generators or motors and steering compass Motor to steering compass 35 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 8 feet from standard compass 16 feet from steering compass.

A cable carrying 25 Ampères 24 feet from standard compass 10 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 No.

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.

A. K. Kar

Builder's Signature.

Date

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 electrical installation of this vessel has been installed under special survey in accordance with the Rules and approved plans, the workmanship and material are good and on completion the installation was tested under full working conditions and found to be efficient, and in my opinion, is eligible to have record of ELECTRIC LIGHT.

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

Elec. Light

H. D. Buchanan
2/6/31

Total Capacity of Generators 266 Kilowatts.

The amount of Fee ... ₹ 572.00 :
When applied for, 1/4/1931
Travelling Expenses (if any) £ : :
When received, 1/5/1931

H. D. Buchanan & self.

K. Kishigami
Surveyor to Lloyd's Register of Shipping.

Committee's Minute Feb. 12 JUN 1931

Assigned

Elec. Light



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Lloyd's Register
Foundation

Im. 1.38.—Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)