

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 3 JAN 1927

Date of writing Report 19-11-1926 When handed in at Local Office 19 Port of KOBE

No. in Survey held at HARIMA Date, First Survey 1st October 1926 Last Survey 19th November 1926
Reg. Book. (Number of Visits.....2.....)

on the Twin Screw Motorship "YAHIKO MARU". Tons { Gross
Net

Built at HARIMA By whom built KOBE STL WKS. HARIMA OKYO. Yard No. 111 When built 1926

Owners ITAYA MIYAKICHI Port belonging to KOBE.

Electric Light Installation fitted by SHIBAYAMA ENG WKS + HARIMA OKYO. Contract No. 111 When fitted 1926.

System of Distribution TWO-WIRE.

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

Direct or Alternating Current, Lighting DIRECT CURRENT Power - Dits -

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 YES, 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.

Position of Generators ENGINE ROOM. PORT & STARBOARD SIDES.

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 YES.

Main Switch Boards, where placed ENGINE ROOM. AFT END. UPPER PLATFORM

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 YES.

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 micanite and the slab similarly insulated from its framework YES, and is the frame effectively earthed YES.

Are the following fittings as per Rule, viz. - spacing or shielding of live parts YES, accessibility of all parts YES, absence of fuses on back of board YES, 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.

EACH GENERATOR HAS KNIFE SWITCH + AIR CIRCUIT BREAKER, AND EQUALIZER SWITCH INTERLOCKED WITH MAIN CIRCUIT BREAKER.

Instruments on main switchboard 11 ammeters 3 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 DETECTOR.

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.



© 2021 Lloyd's Register Foundation

009341-009349-0188

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 53 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 ✓.

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 LEAD COVERED + ARMOURED.

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 VI YES.

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements PORTABLE - OUTSIDE CHAMBER.

Joints in Cables, state if any, and how made, insulated, and protected JUNCTION BOXES - FIBRE INSULATION.

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES - DECK TUBES + GLANDS.

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 ALL FITTED. AREA OVER TWICE RESPECTIVE CONDUCTORS.

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 6 S DC Type DIRECT CURRENT GENERATOR 3KW PLACED IN ENGINE ROOM.

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 on 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 ✓. 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 NONE, 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 ✓. 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 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.	Ampères.			Fuel Used.	Flash Point of Fuel.
MAIN	3	110	220	500	360	SULZER DIESEL ENGINE.	DIESEL OIL.	ABOVE 150°
AUXILIARY								
EMERGENCY	1	3	220	19	450	HOT BULB ENGINE.	" "	" "
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...	4	2.04064	✓ 91	8.951 mil	500	70 50	RUBBER.	LEAD COVERED. ARMOURED.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	.009	✓ 7	4.93	14	50	"	" " "
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ENGINE ROOM LAMPS	2	.0056	✓ 7	31.96	10	100	"	4 9 4
	CREWS LAMPS	2	.0032	✓ 1	64.00	2.5	110	"	" " "
	BRIDGE LAMP (ENGINEERS)	2	.0032	✓ 1	64.00	3.0	120	"	" " "
	BRIDGE LAMP (OFFICERS)	2	.0032	✓ 1	64.00	4.5	320	"	" " "
	FORE DECK LAMPS	2	.0032	✓ 1	64.00	0.8	540	"	" " "
	AFTER DECK	2	.0032	✓ 1	64.00	1	360.	"	" " "
	WIRELESS	2	.01	✓ 7	48	24	390	"	"
	SEARCHLIGHT								
	MASTHEAD LIGHT...	2	.0014	✓ 1	48	.23	52	"	"
	SIDE LIGHTS...	4	.0014	✓ 1	48	.23	34	"	"
	COMPASS LIGHTS...	2	.0014	✓ 1	48	.01	15	"	"
	POOP LIGHTS	2	.0014	✓ 1	48	.23	360	"	"
	CARGO LIGHTS	2	.009	✓ 7	40.3	1.5	148	"	"
	ARC LAMPS								
	HEATERS	10	.01 - .0396	✓ 19461	48 - 70	49.2	882	"	"

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	1	.1	✓ 19	80.81	115.7	250	RUBBER	ARMOURED.
	MAIN BILGE LINE PUMPS	1	.06	✓ 19	64.08	85.0	250	"	"
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP	1	.0089	✓ 7	40.30	14.8	76	"	"
	CIRC. SEA WATER PUMPS	2	.06	✓ 19	64	90 (each)	240	"	"
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	.0032	✓ 1	64	6.3	76.	"	"
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP	1	.06	✓ 19	64.08	96.4	326	"	"
	WINDLASS	1	.2465	✓ 61	70.0	246.2	760	"	"
	WINCHES, FORWARD	6	.03	✓ 61	80.8	4 @ 253 each	1326	"	"
	WINCHES, AFT	4	.03	✓ 61	80.8	283 "	420	"	"
	STEERING GEAR	1	.0396	✓ 19	64.08	71	520	"	"
	WORKSHOP MOTOR	1	.0089	✓ 7	40.3	20.2	210	"	"
	VENTILATING FANS								
	TURBO - BLOWERS	2	.0406 x 2	✓ 91	80.8	635 each	120	"	"
	OIL PUMPER	1	.0045	✓ 7	40.3	16.7	210.	"	"
	REFRIGERATING MACHINE	2	.0036	✓ 7	31.9	6.8	250	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7. **YES.**

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules. **YES.**

The foregoing is a correct description.

Skasuyb Electrical Engineers.
The Kobe Steel Works, Ltd., Harima Dockyard.

Date

COMPASSES.

Distance between electric generators or motors and standard compass **NEAREST MOTOR - 30 ft. GENERATOR - 175 ft.**

Distance between electric generators or motors and steering compass " " **- 25 ft. " 120 ft.**

The nearest cables to the compasses are as follows:—

A cable carrying **1.4** Ampères **10** feet from standard compass **10** 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.

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. Mikami Builder's Signature.
The Kobe Steel Works, Ltd., Harima Dockyard.

Date **27/11/26.**

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.)

This installation has been constructed + installed under special survey + in accordance with the Rules, tried under working conditions + found satisfactory.

*It is submitted that
this vessel is eligible for
THE RECORD Elec. light.*

Total Capacity of Generators **330** Kilowatts

The amount of Fee ... **Yes 5% ⁰⁰/₁₀₀** When applied for, **NO**

Travelling Expenses (if any) £ **29.20 26/100** When received, **26/100**

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

Committee's Minute **FRI. 7 JAN 1927**

Assigned *Elec light*