

Rpt. 13.

REPORT ON ELECTRIC FITTINGS.

No. 8981

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 19 When handed in at Local Office 19 Port of KOBE. Received at London Office 11 APR 1935

No. in Survey held at HARIMA. Date, First Survey 8-9-34. Last Survey 21-2-1935.
Reg. Book. on the MOTOR VESSEL. "KONGO MARU." (Number of Visits 3.)

Built at HARIMA. By whom built HARIMA S.B. & ENG CO. LTD. Yard No. 205. When built
Tons { Gross 7061.
Net 3761.

Owners KOKUSAI KISEN KABUSHIKI KAISHA. Port belonging to TOKIO.

Electric Light Installation fitted by HARIMA S.B. & ENG CO. LTD. Contract No. 205. When fitted 1935.

Is the Vessel fitted for carrying Petroleum in bulk NO.

System of Distribution TWO WIRE.

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. Are the lubricating arrangements of the generators as per Rule YES.

Position of Generators PORT SIDE OF ENGINE ROOM.

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 FORWARD END OF ENGINE ROOM CENTRAL FACING 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 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, 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., 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 CIRCUIT HAS A TRIPLE POLE CIRCUIT BREAKER WITH AUTOMATIC OVERLOAD AND REVERSE CURRENT RELAYS. (CENTRE POLE FOR EQUALIZER)

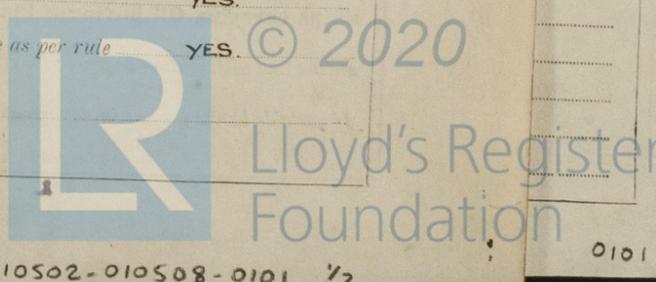
OUTGOING CIRCUIT PROPER RANGE DOUBLE POLE AUTOMATIC OVERLOAD CIRCUIT BREAKER.

Instruments on main switchboard 18. ammeters 3. voltmeters 3. 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 LAMP WITH TWO WAY SWITCH ON EACH GENERATOR PANEL.

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 are the cables insulated and protected as per Tables IV or V of the Rules YES.

Fail of Pressure, state maximum between bus bars and any point of the installation under maximum load 7.69 Volts YES.

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 SUPPORTED BY STRONG BRASS CLIPS & PROTECTED BY GALVANISED IRON SHEETS.

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 ✓.

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 ✓.

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 STARBOARD SIDE OF ENGINE ROOM ON TWEEN DECK 30KW 225V. DC GENERATOR DRIVEN BY DIESEL ENGINE. CONTROLLED FROM SWITCHBOARD NEARBY.

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 ✓.

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 ✓.

Are 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 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	330	225	1465	370	DIESEL ENGINE.	HEAVY OIL	113°C.
AUXILIARY	✓					DIESEL ENGINE.	HEAVY OIL	113°C.
EMERGENCY	1	30	225	1335	550	DIESEL ENGINE.	HEAVY OIL	113°C.
ROTARY TRANSFORMER								

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.	Rate.			
MAIN GENERATOR	4	1.776	91	0.0788	1465	1988	231	PAPER	LEAD COVERED & ARMOURED.
EQUALISER CONNECTIONS	2	0.888	91	0.0788	732.5	994	166	"	" " " "
AUXILIARY GENERATOR	✓								
EMERGENCY GENERATOR	1	0.0927	19	0.0788	133.5	183	60	PAPER	LEAD COVERED & ARMOURED.
ROTARY TRANSFORMER MOTOR GENERATOR	✓								
ENGINE ROOM	1	0.00687	7	0.0354	11	23.5	124.5	RUBBER	LEAD COVERED & ARMOURED.
BOILER ROOM	✓								
AUXILIARY SWITCHBOARDS	1	0.0927	19	0.0788	133.5	183	198	PAPER	LEAD COVERED & ARMOURED.
SHelter Dh. Aft	1	0.0443	7	0.028	2.7	17	4.62	RUBBER	" " " "
" " FORWARD	1	0.0443	7	0.028	2.8	17	3.72	"	" " " "
CREW'S QUARTERS	1	0.0112	7	0.047	15.3	34	198	"	" " " "
SALOON BORT. Dh.	1	0.0218	7	0.063	36	45.5	222	"	" " " "
ACCOMMODATION									
NAVIGATION LIGHTS	1	0.00689	7	0.0354	6	23.5	344	RUBBER	LEAD COVERED & ARMOURED.
WIRELESS	✓								
SEARCHLIGHT	✓								
MASTHEAD LIGHT	1	0.0033	1	0.063	0.25	12	300	RUBBER	LEAD COVERED & ARMOURED.
SIDE LIGHTS	1	0.0033	1	0.063	0.25	12	32	"	" " " "
COMPASS LIGHTS	✓								
POOP LIGHTS	✓								
CARGO LIGHTS	1	0.0218	7	0.063	30	45.5	99	RUBBER	LEAD COVERED & ARMOURED.
ARC LAMPS	✓								
HEATERS	1	0.0592	19	0.063	78	85	99	RUBBER	LEAD COVERED & ARMOURED.

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	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.	Rate.			
BALLAST PUMP	1	1	0.0592	19	0.063	114	135	264	RUBBER	LEAD COVERED & ARMOURED.
MAIN BILGE LINE PUMPS	1	1	0.0218	7	0.063	41	45.5	250	"	" " " "
GENERAL SERVICE PUMP	1	1	0.0927	19	0.0788	155	183	310	PAPER	" " " "
EMERGENCY BILGE PUMP	1	1	0.444	91	0.0788	376	497	250	"	" " " "
SANITARY PUMP	1	1	0.0218	7	0.063	37	45.5	237	RUBBER	" " " "
CIRC. SEA WATER PUMPS	1	1	0.444	91	0.0788	376	497	211	PAPER	" " " "
CIRC. FRESH WATER PUMPS	1	1	0.444	91	0.0788	376	497	231	"	" " " "
FRESH WATER PUMP	1	1	0.0443	7	0.024	13	17	99	"	" " " "
ENGINE TURNING GEAR	1	1	0.0592	19	0.063	80	135	172	RUBBER	" " " "
ENGINE REVERSING GEAR	✓							277	"	" " " "
LUBRICATING OIL PUMPS	2	1	0.0327	19	0.0778	169	183	277	PAPER	" " " "
OIL FUEL TRANSFER PUMP	2	1	0.1154	37	0.063	117	127	189	RUBBER	" " " "
WINDLASS	1	1	0.444	91	0.0788	376	497	607	PAPER	" " " "
WINCHES, FORWARD	2	1	0.284	91	0.063	240	373	73.99	"	" " " "
WINCHES, AFT	6	1	0.0592	19	0.063	136	151	76.92, 96.40, 99.106, 99.205	"	" " " "
WINCHES, AFT	5	1	0.2840	91	0.063	240	373	90.106, 99.205	"	" " " "
WINCHES, AFT	4	1	0.0592	19	0.063	136	151	79.73, 92.76	"	" " " "
STEERING GEAR—										
(a) MOTOR GENERATOR	1	1	0.1154	37	0.063	95	127	264	RUBBER	" " " "
(b) MAIN MOTOR	1	1	0.0592	19	0.063	76	85	792	"	" " " "
WORKSHOP MOTOR	1	1	0.00689	7	0.0354	13.2	23.5	165	"	" " " "
VENTILATING FANS	4	1	0.0443	17	0.028	14	17	92.184, 132.250	"	" " " "

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.

RS. BELON.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass **11 FEET FROM FOLLOW UP MOTOR FOR AUTO STEERER.**

Distance between electric generators or motors and steering compass **3 FEET " " " " " "**

The nearest cables to the compasses are as follows:—

A cable carrying **6** Ampères **11** feet from standard compass **4** 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 WORKING CONDITIONS.**

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.

THE HARIMA SHIP-BUILDING AND ENGINEERING CO., LTD.

M. Hirota

Builder's Signature.

Date **11-3-35.**

for DIRECTOR.

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 fitted under Special Survey in accordance with the rules and approved plans.
 The materials and workmanship are good.
 On completion the installation was tested under full working conditions, and found to be efficient and eligible in our opinion to the record of "ELECTRIC LIGHT."

Noted

*R.H.
26/4/35*

Total Capacity of Generators **990.** Kilowatts.

The amount of Fee ... **£ 56 : 5**

When applied for, **23/3/1935.**

Travelling Expenses (if any) **£ 28.6.35**

When received, **28/6**

A. Edmonds
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 26 APR 1935

FRI. 17 MAY 1935

Assigned

See Nov. J.E. 8987

FRI. 20 SEP 1935

Im. 11.20.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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