

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

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Date of writing Report 26/5/45 19 When handed in at Local Office 26/5/45 19 Port of Karachi

No. in Survey held at Karachi Date, First Survey March 1944 Last Survey 3/3/1945 19  
Reg. Book.

74124 on the S.S. EMPIRE RAJA

Built at Wesermünde By whom built J.C. Tackenberg Yard No. - When built 1922

Owners Min. of War Transport Port belonging to London

Electric Light Installation fitted by Messrs Alexek Ashdown Ltd Contract No. 1944-1945 When fitted

System of Distribution Two Wire

Pressure of supply for Lighting 110 Volts volts, Heating 110 Volts volts, Power 110 Volts 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. NO 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 STAR BOARD 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

NOT NEAR WOODWORK 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 STAR BOARD SIDE OF ENGINE ROOM

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 NOT NEAR 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 and is the

frame effectively earthed YES Are the following fittings as per Rule, viz.: - spacing or stanching of live parts

YES accessibility of all parts YES absence of fuses on back of board NONE proportion of omnibus

bars 1/2" x 1/8" COPPER BARS 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 SWITCH BOARD CONSISTING OF

2 Nos. 150 AMP. DOUBLE POLE KNIFE SWITCHES WITH PORCELAIN CUT-OUT FUSES FOR EACH GENERATOR 1 Nos. 60 AMP DOUBLE

POLE-DOUBLE THROW KNIFE SWITCHES WITH PORCELAIN CUT-OUT FUSES FOR CIRCUITS - NO EQUALIZER SWITCH

Instruments on main switchboard Two ammeters Two 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

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



Insulation of Cables, state type of cables, single or twin SINGLE (FEW OLD CABLES IN ENG ROOM REMOVED TWIN)

Tall 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 0.007 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 sized 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 IN GALVANIZED PIPES SUITABLY SUPPORTED & CLAMPED IN BRACKETS ON DECK WITH BRASS CLIPS INSIDE ACCOMMODATION

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 unarmoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI

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 JENTS MADE WITH SOCKETS ON TERMINALS IN JUNCTION BOXES

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 TEAK WOOD

Earthing Connections, state what earthing connections are fitted and their respective sectional areas NONE ONE CONNECTION FOR EARTH LAMPS

are their connections made as per Rule

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven NONE

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 storerooms and engine rooms and wherever exposed to drip or condensed moisture, watertight

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 NONE

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected YES - FLAME PROOF

FITTINGS

IN PIPES

where are the controlling switches situated NEAR THE ENTRANCE

Searchlight Lamps, No. of 1, whether fixed or portable

are lamps, other than searchlight lamps, No. of 1, are their live parts insulated from the frame or case

Motors, are their working parts readily accessible

are the brushes, brush holders, terminals and lubricating arrangements as per Rule

inflammable gases cannot accumulate and clear of all inflammable material

are they protected from mechanical injury and damage from water, steam or oil

are their axis of rotation fore and aft

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 motor

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed as per Rule

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	Amperes		Fuel Used	Flash Point of Fuel		
MAIN	1	16.5	110	150	STEAM ENGINE				
AUXILIARY	1	8.8	110	80					
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	0.1	19	0.083	150	30	V.I.R.	on perforated tray
	AUXILIARY GENERATOR	2	0.06	19	0.064	80	45	"	"
	EMERGENCY GENERATOR	-							
	ROTARY TRANSFORMER	-							
	AUXILIARY SWITCHBOARDS	-							
	ENGINE ROOM	2	0.0225	7	0.064	28	70	rubber	L.C. 7 armoured
	BOILER ROOM	2	0.007	7	0.036	8	100	V.I.R.	conduit
	Saloon	2	0.0225	7	0.064	38.8	250	rubber	perforated tray
	messing accommodation	2	0.0225	7	0.064	30.4	90	"	"
	Post accommodation	2	0.0225	7	0.064	32.4	250	"	tray & conduit
	Forecastle accommodation	2	0.0225	7	0.064	28.4	400	"	"
	Navigation main.	2	0.01	7	0.064	2	280	"	on tray
	WIRELESS	2	0.0225	7	0.064	35	250	rubber	L.C. in conduit
	SEARCHLIGHT	2							
	MASTHEAD LIGHT	2	0.002	3	0.029	0.5	260	"	"
	SIDE LIGHTS	2	"	"	"	1.0	50	"	"
	COMPASS LIGHTS	2	"	"	"	1.0	40	CTS	"
	POOP LIGHTS	2	"	"	"	0.5	520	rubber	L.C. Conduit
	CARGO LIGHTS	2	0.007	7	0.036	20		rubber	"
	ARC LAMPS								
	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.

*J. Wright*  
Manager,  
Kurehli

Electrical Engineers.

Date *3/5/45*

#### COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ feet from standard compass \_\_\_\_\_ feet from steering compass.

A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ feet from standard compass \_\_\_\_\_ feet from steering compass.

A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ 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.

Builder's Signature.

Date

Is this installation a duplicate of a previous case ☒ If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The materials and quality of workmanship are good and this vessel is eligible, in my opinion, to have the electrical equipment included in the notation L.M.C.*

Total Capacity of Generators *25.3* Kilowatts

Amount of Fee ... *£ Rs 195/-* When applied for, *1/6/1945*  
Travelling Expenses (if any) £ \_\_\_\_\_ When received, *19*

*R. M. Rundle*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FM: 5 OCT. 1945*

Assigned *See minute on R. 9*

Im. 3.21—Transfer.  
(The Surveys are requested)



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Foundation