

Rpt. 13.

No. 50931

**REPORT ON ELECTRIC FITTINGS.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

26 NOV 1930

Received at London Office

Date of writing Report 15. 10 1930 When handed in at Local Office 22. 11. 1930 Port of Glasgow.

No. in Survey held at Paisley  
Reg. Book.

Date, First Survey 2. 9. 30 Last Survey 14. 10 1930

(Number of Visits 3)

90830 on the

T.S.S. "HIRAVATI"

Tons { Gross 580

Net

Built at Paisley

By whom built

Bow, McLellan &amp; Co.

Yard No. 493

When built 1930

Owners

The Bombay Steam Navigation Co. Ltd

Port belonging to

Bombay.

Electric Light Installation fitted by

Messrs. A.T. Robertson &amp; Co.

Contract No. 493

When fitted 1930

**System of Distribution**

Double Wire

**Pressure of supply for Lighting**

110

volts, Heating

volts, Power

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 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

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 Generator**

Engine Room (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 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

Alongside Generator

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

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

Yes

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

D/P Main Switch &amp; fuses

D/P Circuit Switches &amp; D/P Fuses

**Instruments** on main switchboard

ammeter

voltmeter

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

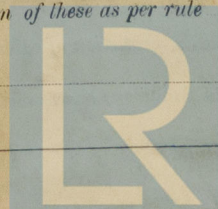
Two lamps in series method

**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



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Foundation

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Cables: Single, twin, concentric, or multicore *Single & Twin* 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 *2 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

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 surfaces, or to avoidable risk of mechanical damage *Yes*

Support and Protection of Cables, state how the cables are supported and protected *Lead & Armoured in gold clips*  
*Lead covered in Brass 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

Joints in Cables, state if any, and how made, insulated, and protected *No joints*

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 *Compo Tube*

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

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

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 *No*, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *No*, 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, are the coils self-contained and readily removable for replacement, are the brushes, brush holders, terminals and lubricating arrangements as per Rule, are the motors placed in well-ventilated compartments in which 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 axes 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 motors and

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	1	12	110	109	700	Enclosed Steam Eng			
AUXILIARY	1	1	110	9.1		Steam Eng			
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	.1	19	.083	83	25	VSR	Lead Cord
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR	2	.022	7	.064	9.1	12	VSR	Lead Cord
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	BOILER ROOM	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	ACCOMMODATION	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	Upper Deck	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	Mid Main Deck	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	Lower Main Deck	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	Forecastle	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHTS	2	.00194	3	.029	3	130		Lead Cord
	SIDE LIGHTS	2	.00194	3	.029	3	130		Lead Cord
	COMPASS LIGHTS	2	.00194	3	.029	3	130		Lead Cord
	POOP LIGHTS	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	CARGO LIGHTS	2	.00455	14	.029	14	30	VSR	Lead & Armoured
	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								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	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.

H. Robertson & Co

Electrical Engineers.

Date 6<sup>th</sup> Nov '30

#### COMPASSES.

Distance between electric generators or motors and standard compass

100 ft

Distance between electric generators or motors and steering compass

100 ft

The nearest cables to the compasses are as follows:—

A cable carrying 6 Amperes 12 feet from standard compass 12 feet from steering compass.

A cable carrying 12 Amperes into ~~12~~ standard compass e into ~~12~~ steering compass.

A cable carrying 12 Amperes 12 feet from standard compass 12 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 7/16 degrees on every course in the case of the standard compass, and 7/16 degrees on every course in the case of the steering compass.

BOW, McLACHLAN & CO., LTD.

John Bowler  
Director

Builder's Signature.

Date 15<sup>th</sup> Nov. 1930

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.)

This installation has been fitted on board under special survey,  
tested under full working conditions & found satisfactory.  
The materials and workmanship were found to be good and  
sound.

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

(S)  
28/11/30

Total Capacity of Generators

13

Kilowatts.

The amount of Fee ...

£ 13 : 0

When applied for,

28/10/1930

Travelling Expenses (if any) £

When received,

1/11/1930

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 25 NOV 1930

Assigned

Elec. Light



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