

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 15 NOV 1929

Date of writing Report 19 When handed in at Local Office 15 NOV 1929 Port of **SUNDERLAND**

No. in Survey held at **Sunderland** Date, First Survey **8th Oct 1929** Last Survey **6 Nov 1929**

Reg. Book, **Suk.** (Number of Visits.....)

42063 on the **S. S. Rajahstan** Tons { Gross **6391**
Net **3875**

Built at **Sunderland** By whom built **Bartram Sons Ltd** Yard No. **267** When built **1924**

Owners **Hindustan Steam Shipping Co** Port belonging to **Newcastle**

Electric Light Installation fitted by **The Sunderland Forge & Eng Co Ltd** Contract No. **267** When fitted **1929**

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 ————, is an adjustable regulating resistance fitted in series with each shunt field ————

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 **In main 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 **In main 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 ———— 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 **Yes**

Is the frame effectively earthed **Yes** Are the fittings as per Rule regarding: — spacing or shielding of live parts **Yes**

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

Main D. P. Switch & Fuses for Generator & Single Pole Switches & D. P. Fuses for Feeder Circuits

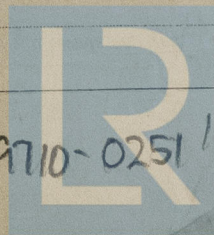
Instruments on main switchboard **one** ammeters **one** voltmeters ———— synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Earth Lamp, Switch & Fuse on each Pole

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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Cables: Single, twin, concentric, or multicore *Single* 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 *4.4 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 objects, or to avoidable risk of mechanical damage *Yes*

Support and Protection of Cables, state how the cables are supported and protected *Main cables V.I.R. Braided run in Screwed G.I. Pipe made watertight & Accommodation Lead covered secured with Brass clips*

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

Joints in Cables, state if any, and how made, insulated, and protected *none made*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *all 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 *Earth Indicating Lamps*

are their connections made as per Rule *Yes*

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 *The installation is in accordance with the Society's Rules. The main engine is driven by the main engine.*

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

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 *1*, whether fixed or portable *1*, are their fittings as per Rule

Arc Lamps, other than searchlight lamps, No. of *1*, are their live parts insulated from the frame or case *1*, are their fittings as per Rule

Motors, are their working parts readily accessible *1*, are the coils self-contained and readily removable for replacement *1*, are the brushes, brush holders, terminals and lubricating arrangements as per Rule *1*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *1*, are they protected from mechanical injury and damage from water, steam or oil *1*, are their axes of rotation fore and aft *1*, 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 *1*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *1* and *1*

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

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	10	110	90.9	375	Single Cylinder Steam Engine		
AUXILIARY								
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	.07592	19	.072	90.9 ✓	30	V.I.R.	In G.I. Pipe
	EQUALISER CONNECTIONS... ..								
	AUXILIARY GENERATOR... ..								
	EMERGENCY GENERATOR... ..								
	ROTARY TRANSFORMER... ..								
	AUXILIARY SWITCHBOARDS... ..								
	ENGINE ROOM... ..								
	BOILER ROOM... ..	2	.00299	3	.036	7.4 ✓	30	V.I.R.	Braided in G.I. Pipe
	ACCOMMODATION & Navigation... ..	2	.00761	7	.036	10.7 ✓	330	V.I.R.	Braided in G.I. Pipe
	Engines & Aft... ..	2	.00299	3	.036	7.83 ✓	96	V.I.R.	Braided in G.I. Pipe
		</							

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.
	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.

p.pro. THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

W. H. Haffner Electrical Engineers.

Date 16th Oct. 1929.

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 4.2 Ampères 10 feet from standard compass 10 feet from steering compass.

A cable carrying 18 Ampères 10 feet from standard compass led into feet from steering compass.

A cable carrying 18 Ampères led into feet from standard compass 10 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power yes

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted yes.

The maximum deviation due to electric currents was found to be nil degrees on all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.

For Bartram & Sons Ltd.

Wm. C. Brown

Secretary

Builder's Signature.

Date

12th Nov 1929

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 above installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation elec. light wireless.

Elec. light

W. T. Badger 19/11/29

Total Capacity of Generators 10 Kilowatts.

The amount of Fee £ 10:.

When applied for, 5 Nov 1929

Travelling Expenses (if any) £ :

When received, 13 Nov 1929

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec. light



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