

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. Sub. (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 1924

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 micaite 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

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

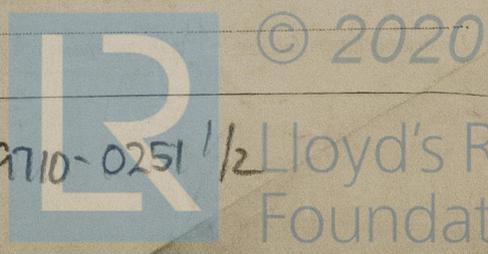
Instruments on main switchboard one ammeters one voltmeters — synchronising device for paralleling purposes.

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.



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 _____, 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 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 generator is driven by steam 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 _____

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 _____

where are the controlling switches situated _____, how are the cables led _____

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 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. Ampères.	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 Engineers & Aft	2	.00761	7	.036	10.7	330	V.I.R.	Braided in G.I. Pipe
		2	.00299	3	.036	7.83	96	V.I.R.	Braided in G.I. Pipe
	WIRELESS	2	.01046	7	.044	12.27	360	V.I.R.	Braided in G.I. Pipe
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.00194	3	.029	.36	568	V.I.R.	Braided in G.I. Pipe
	SIDE LIGHTS	2	.00194	3	.029	.36	80	V.I.R.	Lead covered
	COMPASS LIGHTS	2	.00194	3	.029	.18	32	V.I.R.	Lead covered
	STEERING LIGHTS	2	.00299	3	.036	3.8	346	V.I.R.	Braided in G.I. Pipe
	CARGO LIGHTS	4	.00701	7	.036	13.6	96	V.I.R.	Braided in G.I. Pipe
	ARC LAMPS								
	HEATERS								

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								
	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. 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

17th 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. Budget
19/11/29

Total Capacity of Generators *10* Kilowatts.

The amount of Fee ... £ *10* : : *5 Nov 19 29*

Travelling Expenses (if any) £ : : *13 Nov 19 29*

W.T. Budget

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec light

Im. 2.28.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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