

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

SAT JUN 16 1923

Date of writing Report 19 When handed in at Local Office 15/6/23 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle. Date, First Survey 27<sup>th</sup> Sep/1922 Last Survey 20<sup>th</sup> April 1923  
Reg. Book. (Number of Visits 31)

67692 on the Mongolia Tons { Gross 15550  
Net 9550

Built at Newcastle. By whom built Sir W. G. Armstrong Whitworth & Co. Ltd. Yard No. 964 When built 1923.

Owners P. & O. Steam Navigation Co. Ltd. Port belonging to Newcastle.

Electric Light Installation fitted by Sir W. G. Armstrong Whitworth & Co. Ltd. Contract No. 964 When fitted 1923.

System of Distribution Single wire earth return

Pressure of supply for Lighting 105 volts, Heating 105 volts, Power 105 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 overload 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 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 Dynamo platform at aft end 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 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 On dynamo platform at aft end of engine room, Emergency switches in emergency dynamo room, both decks

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, 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 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

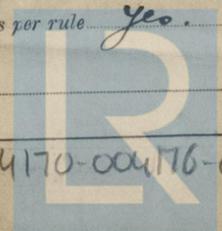
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 600 Amps S.P. single throw knife switch to each of 5 dynamos, 26-100 Amps, 6-200 Amps, 4-300 Amps six way single pole switches to outgoing circuits

Instruments on main switchboard 5 ammeters 1 voltmeters no 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

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.



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004170-004176-0081

Insulation of Cables, state type of cables, single or twin Single twins are the cables insulated and protected as per Tables III or ~~IV~~ of the Rules Yes

Fall 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 Hot in all cases

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 V.I.R. taped & braided cables in engine room & deck spaces

carried in galvanized iron pipe. Officers' engines & spaces acc<sup>n</sup> V.I.R. cable taped & braided in wood casing. 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 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 None made.

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 Lead.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Brass plate 6"x5" secured by 4 3/4 bolts to beams, are their connections made as per Rule Yes.

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 In emergency dynamo room on boat deck, internal combustion engine (paraffin) by Messrs. Parsons.

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 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 portable, are their fittings as per Rule Yes

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 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 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.		Fuel Used.	Flash Point of Fuel.
MAIN	5	48	105	457	450	Steam engine	
AUXILIARY							
EMERGENCY	1	25	105	238	650	Internal Combustion engine	Flash on petrol Running on paraffin
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. Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
Each	MAIN GENERATOR	1	.7435	91	.103	450	60	V.I.R.	taped & braided
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	1	.4064	61	.093	238	70	50	50
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	WIRELESS	1	.06	19	.064	30	370	V.I.R.	taped & braided
	SEARCHLIGHT	1	.1009	19	.083	60	405	50	lead covered
	MASTHEAD LIGHT	2	.00455	17	.029	1.2	450	50	50
	SIDE LIGHTS	2	.00194	3	.029	1.2	120	50	50
	COMPASS LIGHTS	2	.00194	3	.029	.28	50	50	50
	POOP LIGHTS	2	.00455	17	.029	1.2	500	50	50
	CARGO LIGHTS	2	.00455	17	.029	2.24	SEE BOOK OF DIAGRAMS	50	50
	ARC LAMPS	1	.00701	14	.036	4.76	SEE BOOK OF DIAGRAMS	50	50
	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. Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP						Single length		
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP	1	.1478	37	.072	130	340	V.I.R.	taped & braided
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	2	.1009	19	.083	84	60	50	50
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	" PURIFIER MOTOR	1	.00455	7	.029	8.0	120	50	50
	WINDLASS								
	Hoisting gear	1	.02214	7	.064	10	50	50	50
	Sounding machine	1	.01462	7	.052	15	160ft double length	50	50
	STEERING GEAR								
	WORKSHOP MOTOR	1	.02214	7	.064	20	90	50	50
	VENTILATING FANS								
	Refrigerator	2	.07593	19	.072	90	100	50	50
	Trincing machine	1	.009	19	.083	90	390	50	50
	Ice Cream freezer	1	.00701	14	.036	10	60	50	50
	Cake trivet	1	.01046	14	.046	10	60	50	50
	Dish Washer	2	.00701	14	.036	10	60	50	50
	Plate Peel	1	.00701	14	.036	10	337.35	50	50
	Dough mixer	1	.03960	19	.082	28	38	50	50
	Electric toaster	1	.00701	14	.036	7	50	50	50
	Purero's lift	2	.02214	7	.064	28	237 x 130	50	50
	Engine room lift	1	.02214	7	.064	28	160	50	50
	Electrician's Conductor	2	.02214	7	.064	26.5	80 x 740	50	50

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.

*Sir W. G. Armstrong Whitworth & Co.* Electrical Engineers. Date *5/6/23.*

**COMPASSES.**

Distance between electric generators or motors and standard compass *160 feet.*  
 Distance between electric generators or motors and steering compass *160 feet*  
 " " " " " " " " *apt* " *214 feet.*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *.1* Ampères *1* feet from standard compass *5* feet from steering compass.  
 A cable carrying *.2* Ampères *10* feet from standard compass *1* feet from steering compass.  
 A cable carrying *.4* Ampères *10* feet from standard compass *1* 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 *lie* degrees on *all* course in the case of the standard compass, and *lie* degrees on *all* course in the case of the steering compass.

**SIR W. G. ARMSTRONG, WHITWORTH & CO. LTD.**

*H. Gillman* Builder's Signature. Date *7-6-23*

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 Societys Rules. The vessel in my opinion is eligible for notation elec light, wireless*

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

*JWD*  
*20/6/23*

Total Capacity of Generators *286.* Kilowatts

The amount of Fee ... £ *38: 8/-* When applied for, *2/5/23*

Travelling Expenses (if any) £ : : When received, *7/5/23*

*W. T. Badger.*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_

Assigned \_\_\_\_\_

1m. 322.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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