

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

WED APR 25 1923

Date of writing Report 20.3.23 When handed in at Local Office 23-4 Port of Glasgow  
 No. in Survey held at GLASGOW Date, First Survey 26.2.22 Last Survey 16.3.1923  
 Reg. Book. 38481 on the M. Y. "DOMANA" (Number of Visits.....)  
 Tons { Gross 8250  
 Net         
 Built at WRIGHTON By whom built BARCLAY CURLE & CO Yard No. 393 When built 1923  
 Owners THE BRITISH INDIA STEAM NAV. CO. LTD Port belonging to GLASGOW  
 Electric Light Installation fitted by MRSRS A. WATSON & CO LTD Contract No. 393 When fitted 1923

System of Distribution Double wire Distribution System  
 Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.  
 Direct or Alternating Current, Lighting Direct Current Power Direct Current  
 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 Yes, is an adjustable regulating resistance fitted in series with each shunt field Yes; fitted on Main Switchboard  
 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 1 Port Side & 1 Starboard Side of Engine Room; Emergency in superstructure, 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 Aft end of Engine Room: 4 ft from Starboard Side  
 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, 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 1 Pole insulated with mica, and is the frame effectively earthed  
 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. 1 D.P. Switch & 1 D.P. overload & reverse current circuit breaker, & 1 S.P. Paralleling Switch for each dynamo.  
each power circuit D.P. Switch & circuit breaker: each lighting circuit D.P. Switch & fuses.  
 Instruments on main switchboard 3 ammeters 3 voltmeters 3 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 2 Earth lamps for the complete installation.  
 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



© 2021

Lloyd's Register Foundation



**Insulation of Cables,** state type of cables, single or twin Single & twin 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 3 feet

**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

Soldering Sockets on all cables of .007 sq inch and over.

**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

**Support and Protection of Cables,** state how the cables are supported and protected. In Accommodation cables run on wood grounds supported by brass clips. In Turn Disks on steel ground with covers. 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 VI Yes.

**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** no joints

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

**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 or fibre.

**Earthing Connections,** *state what earthing connections are fitted and their respective sectional areas*

....., are their connections made as per Rule .....

**Alternative Lighting**, are the groups of lights in the propelling machinery space arranged as per Rule..... 240

**Emergency Supply**, state position and method of control of the emergency supply and how the generator is driven. 16 K.W. Petrol Paraffin set placed in superstructure, emergency switchboard has change over D.P. Switch to main switchboard.

**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 ..... 250.

**Fittings**, are all fittings on weather decks, in stokeholds 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

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 le

where are the controlling switches situated \_\_\_\_\_

Searchlight Lamps, No. of 1, whether fixed or portable Portable, are their fittings as per Rule wiring only

**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 axis 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.	WHEN DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ... ..	2	215	220	380.	300	Diesel Engine.		
AUXILIARY ... ..	—	—	—	—	—	—	—	
EMERGENCY ... ..	1	16	220.	73.	1100.	Petrol Paraffin Engine.	Paraffin.	
ROTARY TRANSFORMER	—	—	—	—	—	—	—	

## LIGHTING AND HEATING CONDUCTORS.

[illegible]

## 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 ... ..	1	11680	37	.064	120 ✓	24	S.S. R	C.C. & A.S.
	MAIN BILGE LINE PUMPS ...	2	.03214	7	.064	37.5 ✓	26	"	"
	GENERAL SERVICE PUMP ...	1	—	—	—	—	—	"	"
	EMERGENCY BILGE PUMP ...	1	.02214	7	.064	41 ✓	230.	"	"
	SANITARY PUMP ... ..	1	.03960	19	.052	61. ✓	85.	"	"
	CIRC. SEA WATER PUMPS ...	—	—	—	—	—	—	"	"
	CIRC. FRESH WATER PUMPS ...	—	—	—	—	—	—	"	"
	AIR COMPRESSOR ... ..	1	175000	—	—	300 ✓	200 ✓	"	"
	FRESH WATER PUMP ... ..	1	.00701	7	.036	18. ✓	95.	"	"
	ENGINE TURNING GEAR ...	2	.02214	7	.064	41. ✓	110	"	"
	ENGINE REVERSING GEAR ...	—	—	—	—	—	—	"	"
	LUBRICATING OIL PUMPS ...	2	.02214	7	.064	37.5 ✓	100	"	"
	OIL FUEL TRANSFER PUMP ...	1	.00701.	7	.036	10. ✓	24	"	"
	WINDLASS ... ..	1	.1964	37	.083	250	330	"	"
	WINCHES, FORWARD ... ..	4	.168	37	.064	150 ✓	220	"	"
	BOAT WINCHES ... ..	2	.168	37	.064	111.	210	"	"
	WINCHES, AFT ... ..	4	.168	37	.064	121.	250.	"	"
	STEERING GEAR ... ..	2	.11680	37	.064	120.	190	"	"
	WORKSHOP MOTOR ... ..	1	.00701	7	.036	17 ✓	650	"	"
	VENTILATING FANS ... ..	1	.00701	7	.036	17. ✓	170	"	"
	Workshop Ventilator ... ..	1	.1168	37	.064	111.	130.	"	"
	Workshop Vent fan ... ..	1	.00701	7	.036	3.5 ✓	250	"	"
	Hot Salt Water ... ..	1	.00701	7	.036	24 ✓	170	"	"
	Cylinder Cooling Pump ...	2	.10090	19	.083	96. ✓	16	"	"
	Piston Cooling ... ..	2	.03360	19	.052	41 & 61. ✓	68.	"	"
	Refrig Water Pump ... ..	1	.00701	7	.036	7. ✓	55 & 60.	"	"
	57 Door Motor ... ..	1	.00701	7	.036	7. ✓	60.	"	"
	Refrig Motor ... ..	2	.03960	19	.052	57. ✓	40.	"	"
	Brine Pump ... ..	2	.00701	7	.036	14 ✓	100.	"	"
	Clayton Fire Motor ... ..	1	.03360	19	.052	51. ✓	60.	"	"



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.

FOR ARCHD. WATSON & CO., LTD.

Electrical Engineers.

Date 5-4-23.

COMPASSES.

Distance between electric generators or motors and standard compass 168' from generators: 140' ft from Vent Motor.  
Distance between electric generators or motors and steering compass 160' " " 132' " " "

The nearest cables to the compasses are as follows:—

A cable carrying 10 Amperes 3 feet from standard compass. 6 feet from steering compass.

A cable carrying 3 Amperes 3 feet from standard compass. in feet from steering compass.

A cable carrying 3 Amperes in feet from standard compass. 3 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power 4/10

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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

H. S. Cully, Secretary.

Builder's Signature.

Date 16/4/23

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.)

This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory. The workmanship was found to be good & correct.

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

30-4-23.

Total Capacity of Generators 446 Kilowatts

The amount of Fee ... £12.130. When applied for, 23/3/23.

Travelling Expenses (if any): £ See 19.11.23

J. S. Rankin, Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW

24 APR 1923

Assigned Elce. Light



© 2021

Lloyd's Register Foundation