

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office WED APR 25 1923

Date of writing Report 20.3.23 When handed in at Local Office 23.4.23 Port of Glasgow

No. in Survey held at GLASGOW Date, First Survey 26.2.22 Last Survey 16.3.1923  
Reg. Book. (Number of Visits.....)

38481 on the M. Y. "DOMANA" Tons { Gross 8250' Net

Built at WRIGHTON By whom built BARCHY 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 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. 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.



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Insulation of Cables, state type of cables, single or twin Single twisted 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 Tests.

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 Yes

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 Tween Decks on steel ground with covers.  
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 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 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 or fibre.

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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Yes, how are the cables led Yes.

where are the controlling switches situated Yes.

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 No, 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 Yes.

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 Yes.

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office Yes.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	215	220	280	300	Diesel Engine		
AUXILIARY	—	—	—	—	—			
EMERGENCY	1	16	220	73	1100	Petrol Paraffin Engine	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 Amps.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	3	1.75000	—	—	280	130	V.I.R.	P.C.A.+B.
	AUXILIARY GENERATOR	—	—	—	—	—	—	—	—
	EMERGENCY GENERATOR	2	.06000	19	.064	73	40	V.I.R.	P.C.A.+B.
	ROTARY TRANSFORMER	—	—	—	—	—	—	—	—
	AUXILIARY SWITCHBOARDS	2	.06000	19	.064	73	230	V.I.R.	P.C.A.+B.
	ENGINE ROOM	1	.02214	7	.064	26	75	"	"
	BOILER ROOM	—	—	—	—	—	—	—	—
	Heaters	2	.42850	61	.103	314	150	V.I.R.	P.C.A.+B.
	1 <sup>st</sup> Cl. Accommodation	1	.02214	7	.064	39	150	"	"
	2 <sup>nd</sup> " " "	1	.02214	7	.064	24	150	"	"
	Crew + Cargo	2	.03960	19	.052	36	150	"	"
	Painting Machinery	2	.10090	19	.083	105	150	"	"
	WIRELESS	1	.02214	7	.064	14	170	V.I.R.	P.C.A.+B.
	SEARCHLIGHT	2	.03960	19	.052	40	620	"	"
	MASTHEAD LIGHT	1	.00124	3	.029	.5	240	"	"
	SIDE LIGHTS	2	.00194	3	.029	.5	55	"	Lead Covered
	COMPASS LIGHTS	2	.00194	3	.029	.25	40	"	"
	POOP LIGHTS	2	.00194	3	.029	.5	45	"	Lead Covered
	CARGO LIGHTS	2	.00194	3	.029	1.5	60	"	Lead Covered
	ARC LAMPS	—	—	—	—	—	—	—	—
	HEATERS	2	.00194	3	.029	2.2	45	"	"

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current Amps.	Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	.11680	37	.064	120	24	V.I.R.	P.C.A.+B.
	MAIN BILGE LINE PUMPS	2	.02214	7	.064	37.5	26	"	"
	GENERAL SERVICE PUMP	—	—	—	—	—	—	"	"
	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	1.75000	—	—	900	200	"	"
	FRESH WATER PUMP	1	.00701	7	.036	17	35	"	"
	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	.064	250	330	"	"
	WINCHES, FORWARD	4	.1168	37	.064	150	230	"	"
	WINCHES, AFT	2	.1168	37	.064	150	230	"	"
	STEERING GEAR	2	.11680	37	.064	120	650	"	"
	WORKSHOP MOTOR	1	.00701	7	.036	17	170	"	"
	VENTILATING FANS	1	.00701	7	.036	17	130	"	"
	Workshop Winches	1	.1168	37	.064	150	250	"	"
	Workshop Dist. fans	1	.00701	7	.036	3.5	170	"	"
	Hot Salt Water	1	.00701	7	.036	24	16	"	"
	Cylinder Cooling Pump	2	.10090	19	.083	96	68	"	"
	Piston Cooling	2	.03960	19	.052	41 & 61	55 & 40	"	"
	Refrig. Water Pump	1	.00701	7	.036	7	60	"	"
	1 <sup>st</sup> Door Motor	1	.00701	7	.036	7	40	"	"
	Refrig. Motor	2	.03960	19	.052	57	100	"	"
	Brine Pump	2	.00701	7	.036	14	60	"	"
	Clayton Tire Motor	1	.03960	19	.052	51	100	"	"

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.

*D. Dundas* DIRECTOR

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 Ampères 8 feet from standard compass 6 feet from steering compass.

A cable carrying 3 Ampères 3 feet from standard compass in ~~feet~~ steering compass.

A cable carrying 3 Ampères 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 *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 *any* course in the case of the standard compass, and *Nil* degrees on *any* course in the case of the steering compass.

*H. S. Cusley* Secretary

Builder's Signature.

Date 16/4/23

Is this installation a duplicate of a previous case *No* <sup>Not a duplicate</sup> 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 in our full working conditions and found satisfactory. The workmanship was found to be good overall.*

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

*BK*  
30-4-23

Total Capacity of Generators *446* Kilowatts

The amount of Fee ... £ *12.130* : *23/3/23* When applied for, 19 *23*

Travelling Expenses (if any): £ : *See det Bk* When received, 19 *23*

*J. Shankin*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW** 24 APR 1923

Assigned *See light*

*BK*

*AZ*  
*21.4.23*

Im. 328.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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