

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

WED. JUL 4 1923
Received at London OfficeDate of writing Report 28/6/23 19 23 When handed in at Local Office 2/7/ 19 23 Port of GLASGOWNo. in Survey held at GLASGOW Date, First Survey 10th May 1922 Last Survey 4th June 1923
Reg. Book. (Number of Visits) 1357818 on the RY. DALGONA Tons { Gross _____
Net _____Built at LINTHOUSE By whom built ALEX STEPHEN & SON LTD No. 497 When built 1923Owners THE BRITISH INDIA STEAM NAV. CO LTD Port belonging to GLASGOWElectric Light Installation fitted by ALEX STEPHEN & SON LTD Contract No. 497 When fitted 1923System of Distribution DIRECT CURRENT, TWO WIREPressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 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 YESGenerators, do they comply with the requirements regarding overload YES, are they compound wound YESare 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 YESAre 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 YESPosition of Generators IN ENGINE ROOMis the ventilation in way of the generators satisfactory YES, are they clear of all inflammable material YESif 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 YESare their axis of rotation fore and aft YESEarthing, are the bedplates and frames of the generating plant efficiently earthed YES are the prime movers and their respective generators in metallic contact YESMain Switch Boards, where placed IN ENGINE ROOM AT MAIN DECK LEVEL

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 YESare they protected from mechanical injury and damage from water, steam or oil ON SPECIAL PLATFORM, 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 YESif 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 YES, and is the frame effectively earthed YESAre 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 YESindividual fuses to voltmeter, pilot or earth lamp YES, connections of switches YESMain Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches ON EACH GENERATOR ONED.P. 2000 AMP CIRCUIT BREAKER INTERLOCKED WITH A SINGLE POLE SWITCH FOR EQUALIZING CABLE, WITH OVERLOAD ANDREVERSE CURRENT RELEASE. THE OUTGOING CIRCUITS HAVE D.P. CIRCUIT BREAKERS WITH OVERLOAD RELEASE OR S.P. SWITCHES AND D.P. FUSES.Instruments on main switchboard EIGHT ammeters TWO voltmeters AND ONE VOLTMETER 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 LAMPSSwitches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YESSection 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 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 LIGHTING 2 VOLTS, POWER 2 VOLTS + 5%

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 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 Yes

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 ALL CABLES LEAD COVERED IN ACCOMMODATION, AND LEAD COVERED, ARMOURED AND BRAIDED IN CARGO AND MACHINERY SPACES.

Support and Protection of Cables, state how the cables are supported and protected WITH STEEL CLIPS AND IN STEEL TROUGHS, THE CABLE IN THE TROUGHS BEING COVERED WITH BITUMEN.

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 AND FIBRE

Earthing Connections, state what earthing connections are fitted and their respective sectional areas NONE FITTED

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 ON BOAT DECK AND DRIVEN BY A PETROL PARAFFIN SET.

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, THEY ARE PROTECTED BY HEAVY STEEL GUARDS AND COVERS, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected No, how are the cables led Yes

where are the controlling switches situated Yes

Searchlight Lamps, No. of WINDING ARRANGEMENTS ONLY, whether fixed or portable PORTABLE, are their fittings as per Rule Yes

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

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 ALL CLEAR, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes

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	300	220	1360	200	DIESEL	ANGLO-PERSIAN DIESEL	180° - 170° (CLOSED)	
AUXILIARY	1	50	220	136.5	340	BOLINDER (HOT BULB)	"	"	
EMERGENCY	1	16	220	75	1000	PETROL, PARAFFIN SET.	"	150°	
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	6	1.03760	27	.103	1360	144	RUBBER	LEAD COV. ARM. & BRASS
	AUXILIARY GENERATOR	2	1.4780	37	.072	136.5	90	"	"
	EMERGENCY GENERATOR	2	1.0090	19	.083	75	24	"	"
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS	4	.74350	91	.103	900	176	"	"
	ENGINE ROOM	2	.00701	7	.036	17.5	40	"	"
	BOILER ROOM								
	PORT WINCHES & GENERAL LIFT	2	.7435	91	.103	400	332	"	LEAD COV. IN STEEL TROUGH
	STAR ² WINDLASS	2	.7435	91	.103	400	332	"	"
	PORT " "	2	.7435	91	.103	400	332	"	"
	" " STAR ²	2	.7435	91	.103	400	332	"	"
	NAVIGATION	2	.00701	7	.036	6	40	RUBBER	LEAD COV. ARM. & BRASS
	OFFICERS & ENGINEERS	2	.00814	7	.064	10	96	"	"
	WIRELESS	2	.00701	7	.036	2.5	108	"	"
	SEARCHLIGHT	2	.00800	19	.084	60	24	"	"
	MASTHEAD LIGHT	2	.00299	3	.036	54	240	"	"
	SIDE LIGHTS	2	.00299	3	.036	54	110	"	"
	COMPASS LIGHTS								
	POOR LIGHTS	2	.02214	7	.064	10.4	340	"	"
	CARGO LIGHTS	2	.00701	7	.036	15	120	"	"
	ARC LAMP GAS FILLER	2	.00701	7	.036	7	120	"	"
	HEATERS (HOT WATER)	2	.02214	7	.064	24	120	"	"
	LUBRICATING OIL	2	.06800	19	.084	75	40	"	"

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	.07898	19	.072	96	40	V.I.R.	LEAD COV. ARM. & BRASS
	MAIN BILGE LINE PUMPS	1	.03960	19	.082	60	40	"	"
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP	1	.03960	19	.082	41	156	"	"
	SANITARY PUMP	1	.03960	19	.082	60	126	"	"
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR	2	1.03760	127	.103	565	50	"	"
	FRESH WATER PUMP	1	.00486	7	.029	11.2	40	"	"
	ENGINE TURNING GEAR	2	.02214	7	.064	25	76	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	1	.00701	7	.036	22	40	"	"
	OIL FUEL TRANSFER PUMP	2	.00486	7	.029	17	40	"	"
	WINDLASS	1	.06840	61	.093	250	60	"	"
	WINCHES, FORWARD	6	.14780	37	.072	137-141	124	"	"
	WINCHES, AFT	7	.14780	37	.072	137-141	100	"	"
	STEERING GEAR	2	.14780	37	.072	135	480	"	"
	WORKSHOP MOTOR	1	.00701	7	.036	17	92	"	"
	VENTILATING FANS	1	.00486	7	.029	7	68	"	"
	SEVENING BLOWER	1	.00620	91	.103	360	100	"	"
	"	1	.00620	91	.103	770	100	"	"
	JACKET COOLING	2	.00360	19	.052	30	56	"	"
	PISTON	2	.01046	7	.044	27.7	48	"	"
	" TRANSFER	1	.01046	7	.044	26	72	"	"
	REFRIGERATING	1	.00701	7	.036	22	32	"	"
	DISINFECTANT	1	.00701	7	.036	17.4	30	"	"
	AIR EXHAUSTER	1	.00486	7	.029	11.5	56	"	"
	OIL SEPARATOR	1	.00194	3	.029	4.75	30	"	"
	CIRCULATING PUMP FOR BOLINDER	1	.00194	3	.029	5.45	64	"	"

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.

ALEXANDER STEPHEN & SONS, LIMITED.

W. M. Arnold Secretary.

Electrical Engineers.

Date 29th June 1923.

COMPASSES.

Distance between electric generators or motors and standard compass 29 Ft. FROM EMERGENCY DYNAMO, 96 Ft. FROM MAIN GENERATORS
Distance between electric generators or motors and steering compass 29 Ft. FROM EMERGENCY DYNAMO, 100 Ft. FROM MAIN GENERATORS

The nearest cables to the compasses are as follows:—

A cable carrying 6 Amperes 17 feet from standard compass 19 feet from steering compass.

A cable carrying 4 Amperes 6 feet from standard compass 4 feet from steering compass.

A cable carrying 1 Amperes 1.6 feet from standard compass 1.6 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.

FOR ALEXANDER STEPHEN & SONS, LIMITED.

W. M. Arnold Secretary.

Builder's Signature.

Date 29th June 1923.

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 & found satisfactory in every way. The workmanship, in my opinion, was good and sound.

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

Elec. Light

5-7-23

Total Capacity of Generators 646 Kilowatts

The amount of Fee ... £ 41-13-0 : : When applied for, 19 : :
Travelling Expenses (if any) £ : : When received, See debit book.

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

Committee's Minute Glasgow 3-JUL 1923

Assigned Elec. Light

1m. 52.—Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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