

Rpt. 13.

No. 42484

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

THU. MAR. 29. 1923

Date of writing Report 20.8.23. 19 When handed in at Local Office 24. 3. 1923 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 18. 12. 22 Last Survey 8. 2. 1923
Reg. Book. 69782 on the S.S. Fegara. (Number of Visits 9) 5809Built at Linthouse By whom built Alex. Stephen & Son Yard No. 499 When built 1923.
Owners The Rhodriat Mail & S.S. Co. Port belonging to London. Tons Gross 5809 Net 3519Electric Light Installation fitted by M^{rs} Alex. Stephen & Son Contract No. 499 When fitted 1923.

System of Distribution DOUBLE WIRE

Pressure of supply for Lighting 100 volts, Heating 100 volts, Power 100 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 IN ENGINE RM. STARSIDE.

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 IN ENGINE RM. BESIDE GENERATORS.

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, ON PLATFORM FOR SWITCH BOARD ONLY, 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 NO, if semi-insulating material is used, are all conducting parts connected to one pole

insulated from the slab with mica or micamite and the slab similarly insulated from its framework YES, 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 NO FUSES, 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 1-600 AMP CIRCUIT

BREAKER FOR EACH GENERATOR FITTED WITH OVERLOAD

THE MACHINES ARE NOT RUN IN PARALLEL, THEREFORE NO EQUALIZING SWITCHES ARE FITTED.

Instruments on main switchboard TWO ammeters TWO 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 LAMPS.

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

Insulation of Cables, state type of cables, single or twin BOTH 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 2 Volts

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 YES

Support and Protection of Cables, state how the cables are supported and protected RUN IN WOOD CASINGS, LEAD COVERED ARM AND BRAIDED RUMON UNDER SIDE OF DECKS AND FIXED WITH BRASS AND GALVANISED IRON CLIPS.

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 NONE

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 VULCANISED 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 YES

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven THE GENERATOR (DRIVEN BY A PORTLAND ENGINE) WITH THE SWITCH BOARD FOR SAME, ARE FITTED IN THE EMERGENCY DYNAMO RM. ON THE BORT DECK AMIDSHIPS

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, (FIVE FITTINGS IN ALL), THESE FITTINGS ARE PROTECTED BY HEAVY IRON GUARDS.

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

where are the controlling switches situated ---

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 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 WHEREVER POSSIBLE, 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 YES, 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 ✓

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

THU MAR 29 1923

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	60	100	600	400	COMPOUND STEAM ENGINE		
AUXILIARY ...								
EMERGENCY ...	1	16	100	160	1100	INTERNAL COMBUSTION	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. Amperes.	Approximate Length (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	0.085	26	0.105	600	38	VIR	LEAD COVERED
	AUXILIARY GENERATOR	2	0.064	37	0.043	100	36	VIR	LEAD COVERED
	EMERGENCY GENERATOR	2	0.064	37	0.043	100	36	VIR	LEAD COVERED
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS...								
	ENGINE ROOM ...	2	0.0221	7	0.064	17.7	46	VIR	LEAD COVERED RAMP & BRASS
	BOILER ROOM ...	2	0.0104	7	0.044	9.8	140	"	" " " "
	1 st CLASS PASSENGERS	2	0.009	10	0.083	48.05	160	"	STEEL TUBING & WOOD CASING
	2 nd " "	2	0.0221	7	0.064	24.55	96	"	" " " "
	OFFICERS & ENGINEERS	2	0.0221	7	0.064	16.35	170	"	" " " "
	CREW	2	0.0221	7	0.064	14	90	"	LEAD COVERED RAMP & BRASS
	SERVICE	2	0.0221	7	0.064	9	85	"	STEEL TUBING & WOOD CASING
	FLUX SUPPLY TO EMERGENCY								
	CREAT FROM MAIN SWBB	2	0.064	37	0.043	100	210	VIR	STEEL TUBING & WOOD CASING
	WIRELESS ...	2	0.0221	7	0.064	15	150	VIR	STEEL TUBING & WOOD CASING
	SEARCHLIGHT ...								
	MASTHEAD LIGHT...	2	0.0029	3	0.036	1.2	330	VIR	LEAD COVERED RAMP & BRASS
	SIDE LIGHTS...	2	0.0019	3	0.020	1.2	96	"	LEAD COVERED
	COMPASS LIGHTS...	2	0.0019	3	0.020	1.2	96	"	" " " "
	POOP LIGHTS...								
	CARGO LIGHTS ...	2	0.0221	7	0.064	30.2	96	VIR	LEAD COVERED RAMP & BRASS
	ARC LAMPS ...								
	HEATERS ...	2	0.0221	7	0.064	24.9	240	VIR	STEEL TUBING & WOOD CASING

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 ...								
	MAIN BILGE LINE PUMPS...								
	GENERAL SERVICE PUMP ...								
	EMERGENCY BILGE PUMP ...	1	0.009	10	0.083	90	198	VIR	STEEL TUBING
	SANITARY PUMP ...								
	CIRC. SEA WATER PUMPS...								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR ...								
	FRESH WATER PUMP ...								
	ENGINE TURNING GEAR ...	1	0.0221	7	0.064	33	70	VIR	LEAD COVERED
	ENGINE REVERSING GEAR ...								
	LUBRICATING OIL PUMPS...								
	OIL FUEL TRANSFER PUMP								
	WINDLASS ...								
	WINCHES, FORWARD ...								
	WINCHES, AFT ...								
	STEERING GEAR ...								
	WORKSHOP MOTOR ...	1	0.00701	7	0.036	14	86	V.I.R.	LEAD COVERED RAMP & BRASS
	VENTILATING FANS ...	1	0.0221	7	0.064	25.5	140	"	" " " "
	" " " "	1	0.0221	7	0.064	20	40	"	" " " "
	" " " "	1	0.0221	7	0.064	20	130	"	" " " "
	OIL PUMPING MOTOR	1	0.00701	7	0.036	8.5	48	"	" " " "
	W.T. DOORS	3	0.060	10	0.064	51	170	"	STEEL TUBING & LEAD COVERED

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.

J.W. M. Dunsell

Director.

Electrical Engineers.

Date 8th March 1923.

COMPASSES.

Distance between electric generators or motors and standard compass 60 FEET FROM THE NEAREST (WIRELESS 1 1/2 K.W. SET)

Distance between electric generators or motors and steering compass 50 " " " " " "

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 1.5 feet from standard compass 1.5 feet from steering compass.

A cable carrying 7.4 Ampères 1.5 feet from standard compass 1.5 feet from steering compass.

A cable carrying Ampères feet from standard compass 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 No degrees on ANY course in the case of the standard

compass, and No degrees on ANY course in the case of the steering compass.

ALEXANDER STEPHEN & SONS, LIMITED.

J.W. M. Dunsell

Director.

Builder's Signature,

Date 8th March 1923.

Is this installation a duplicate of a previous case *yes*. If so, state name of vessel *S.S. Samarka.*

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. The workmanship was found to be good and sound.

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

J.W. Dunsell
5/4/23

Total Capacity of Generators 136. Kilowatts

The amount of Fee ... £ 33 : 6 : 28/2/23

Travelling Expenses (if any) £ :

When received, 28/2/23

J. S. Rankin.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 MAR 1923

Assigned

Elec. Light.

Irony