

Rpt. 13.

No. 99158.

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

9 SEP 1931

Date of writing Report 14/9/1931 When handed in at Local Office 7 SEP 1931 Port of Liverpool

No. in Survey held at Birkenhead Date, First Survey 2/4/31 Last Survey 7/9/1931
Reg. Book. 90879 on the S. S. Hilary. (Number of Visits 19)

Tons { Gross 7403.
Net 4350.

Built at Birkenhead. By whom built Bammell Laird & Co. Ltd. Yard No. 975 When built 1931

Owners Booth S. S. Co. Ltd. Port belonging to Liverpool.

Electric Light Installation fitted by Messrs Sunderland Forge & Eng'g Co. Contract No. When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Double Wire.

Pressure of supply for Lighting 110 volts, Heating - volts, Power 110 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 rating 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, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes

Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators Engine Room Bottom Platform Starboard Side.

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 axes 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 Engine Room Bottom Platform 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, non-ignitable 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 insulated from the slab with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yes

and is the frame effectively earthed Yes. Are the fittings as per Rule regarding: - 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 Double Pole Circuit Breaker for each main generator. 2 way single pole 'V' type switch with double pole fuses for each outgoing circuit.

Instruments on main switchboard 2 ammeters 2 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 Lamp.

Switch and Fuse on each pole.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes.

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes.



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Cables: Single, twin, concentric, or multicore *Single & Twin* are the cables insulated and protected as per Tables IV or V of the Rules *Yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *Lighting 51 Volts Power 42 Volts*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 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

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 *Chain & Accom. V.I.R. Braided Cable in Wood casing and lapping. Machy. spaces & crew's Accom. L.C.A.B. cables secured with G.I. 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 VIII *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 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 Partitions, 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

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 *Emer. Switchboard in Emergency. Dynamo Room having a double pole change over switch & fuses controlling supply from Emergency Gen. set or from 110 volt main switchboard. Emergency Gen. driven by a vertical oil engine.*

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*

Secondary Batteries, are they constructed and fitted as per Rule *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 —, whether fixed or portable —, are their fittings as per Rule —

Are Lamps, other than searchlight lamps, No. of —, are their live parts insulated from the frame of 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 and fitted 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	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	80/85	110	427/773	450	Steam Engines		
AUXILIARY								
EMERGENCY	1	18	110	164	850	Oil Engine.	Paraffin	
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	0.850	127	0.093	727	733	100	V.C.	L.C.B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	0.100	19	0.088	164	172	48	V.C.	L.C.B.
ROTARY TRANSFORMER (GENERATOR)									
ENGINE ROOM	1	0.040	19	0.052	53.3	64	112	V.I.R.	L.C.A.B.
BOILER ROOM									
Emergency Interconnect Auxiliary Switchboards	1	0.100	19	0.083	164	172	256	V.C.	L.C.B.
Navigation	1	0.0225	7	0.064	6	46	352	V.I.R.	Braided.
Accom. Emergency Light	1	0.0225	7	0.064	32.6	46	104	V.I.R.	Braided.
Port Boat Lights	1	0.007	7	0.036	12.3	24	48	V.I.R.	Braided.
Starboard Boat Lights	1	0.007	7	0.036	12.3	24	48	V.I.R.	Braided.
Engine Room Emergency	1	0.007	7	0.036	5.4	24	192	V.I.R.	L.C.B.
Accommodation Crew	1	0.040	19	0.052	28	64	576	V.I.R.	Braided & L.C.A.B.
Officers, Engineers etc	1	0.060	19	0.064	66.4	122	100	V.C.	L.C.B.
1st class Dining Saloon	1	0.0225	7	0.064	27.5	46	432	V.I.R.	Braided & L.C.A.B.
Promenade Deck	1	0.060	19	0.064	73	83	320	V.I.R.	Braided & L.C.A.B.
1st class Upper Deck	1	0.0225	7	0.064	29.5	46	304	V.I.R.	Braided & L.C.A.B.
WIRELESS	1	0.0225	7	0.064	25	46	112	V.I.R.	Braided.
1st class Upper Deck	1	0.060	19	0.064	71.4	83	128	V.I.R.	Braided & L.C.A.B.
SEARCHLIGHTS	1	0.002	3	0.029	0.36	4.8	482	V.I.R.	Braided.
MASTHEAD LIGHT	1	0.002	3	0.029	0.33	4.8	128	V.I.R.	Braided in pipe
SIDE LIGHTS	1	0.002	3	0.029	0.33	4.8	46	V.I.R.	Braided.
COMPASS LIGHTS	1	0.002	3	0.029	0.33	4.8	46	V.I.R.	Braided.
3rd class Accommodation	1	0.040	19	0.052	54.8	64	864	V.I.R.	Braided & L.C.A.B.
1st class	1	0.045	7	0.052	26.1	37	304	V.I.R.	Braided & L.C.A.B.
CARGO LIGHTS	1	0.045	7	0.052	24.2	37	100	V.I.R.	L.C.A.B.
ARE LAMPS Refig. Space	1	0.003	3	0.036	9.8	12	112	V.I.R.	L.C.A.B.
HEATERS	1	0.300	37	0.103	365.8	392	256	V.C.	Braided.
Baker's Oven	1	0.060	19	0.064	109	122	96	V.C.	L.C.B.

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP	1	1	0.075	19	0.072	94	97	192	V.I.R.	L.C.B.
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
Oil Fuel Transfer Pump	1	1	0.003	3	0.036	5.1	12	70	V.I.R.	L.C.A.B.
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR (Cathode)	1	1	0.003	3	0.036	10	12	176	V.I.R.	L.C.A.B.
VENTILATING FANS Workshop	1	1	0.003	3	0.036	5.7	12	152	V.I.R.	L.C.A.B.
1st class Vent Fans	5	1	0.04	19	0.052	55.6	64	304	V.I.R.	Braided & L.C.A.B.
2nd class Vent Fans	4	1	0.04	19	0.052	53.7	64	128	V.I.R.	L.C.A.B.
Cabin Fans	112	1	0.04	19	0.052	45.8	64	100	V.I.R.	L.C.A.B.
Potato Peeler	1	1	0.003	3	0.036	7	12	80	V.I.R.	L.C.B.
Dough Mixer	1	1	0.045	7	0.052	26	37	112	V.I.R.	L.C.B.
Freezer	1	1	0.03	7	0.036	24.5	31	96	V.I.R.	L.C.B.
Bacon Slicer	1	1	0.003	3	0.036	2.2	12	80	V.I.R.	L.C.B.
Milk Machine	1	1	0.010	7	0.034	24	31	120	V.I.R.	L.C.B.

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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO. LTD

Electrical Engineers.

Date 18th Aug 1931

[Handwritten Signature]

COMPASSES.

Distance between electric generators or motors and standard compass 146 feet

Distance between electric generators or motors and steering compass 138 feet

The nearest cables to the compasses are as follows:—

A cable carrying 6 Ampères 28 feet from standard compass 18 feet from steering compass.

A cable carrying 0.23 Ampères 10 feet from standard compass led into feet from steering compass.

A cable carrying 0.23 Ampères led into feet from standard compass 10 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 all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.

JAMMELL LAIRD AND COMPANY LIMITED.

[Handwritten Signature]

Builder's Signature.

Date 4 SEP 1931

SECRETARY.

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 has been fitted in accordance with the requirements of the Rules. It has been tested & found satisfactory. The vessel is eligible in my opinion for rotation elec. light. wireless

[Handwritten Note]
 Elec Light
 W.T. Budget
 15/9/31

Total Capacity of Generators 188 Kilowatts.

The amount of Fee ... £ 35 : 18/2

When applied for, 6/8/1931

Travelling Expenses (if any) £ :

When received, 11/8/1931

[Handwritten Signature]
 W.T. Budget

Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL - 8 SEP 1931

Assigned Electric Light

[Handwritten Signature]



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Im. 11. 20. - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)