

REPORT ON ELECTRIC FITTINGS

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

JAN. JUN. 7 1923

Received at London Office

Date of writing Report *29 5 23* when made at Local Office *29 5 23* Port of *Middlesbrough*

No. in Survey held at *Haveron Hill-on-Tees* Date, First Survey *whiz* Last Survey *Building 19*
Reg. Book. (Number of Visits.....)

on the *Steel Screw Steamer "London Merchant"* Tons { Gross
Net

Built at *Haveron Hill-on-Tees* By whom built *Furness S/B Co Ltd* Yard No. *19* When built *1923*

Owners *Messrs Furness Withy & Co Ltd* Port belonging to *London*

Electric Light Installation fitted by *Furness Shipbuilding Co Ltd* Contract No. When fitted *1923*

System of Distribution *Double Wire Insulated* ✓
Pressure of supply for Lighting *100* ✓ volts, Heating _____ 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. *Level* ✓, 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 *Generator Compartment Port Side Tween Decks* ✓, 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 *Ast Generator in Generator Compt, Port Side, No Ships Tween Dks*

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 micaite 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 *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

D. P. Switch & fuse for each generator, Outgoing circuit, D. P. Change-Over Switch for connecting each generator alternatively to Bus Bars (Fuses Porcelain K.O. Pattern)

Instruments on main switchboard *2* ammeters *1* 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 *Two 16 c/p lamps in series & middle point earthed connected to each Bus Bar by means of Sw & Fuse*

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 *Single ✓* are the cables insulated and protected as per Tables III or IV of the Rules. *Table III*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *5 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. *Main feeder cables are run along strengthening girders, Twin 2ks. All cables which are exposed or where moisture is likely to accumulate are lead covered, armoured and braided.*

Support and Protection of Cables, state how the cables are supported and protected. *Lead covered & braided cables are supported by means of galv iron clips. Lead covered cables being supported by means of brass clips & screws.*

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 secured 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. *Porcelain junction boxes protected with b.I covers*

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*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas. *See W/S. Handlamps are earthed by a separate conductor having sectional area of .001". Cargo lights earthed by a separate conductor having a sectional area of .0049".* 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 *yes ✓*

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 (with exception of Stern Light)*

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 *Strong hinged cast iron 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 *yes ✓*, how are the cables led *yes ✓*

where are the controlling switches situated *yes ✓*

Searchlight Lamps, No. of *yes ✓*, whether fixed or portable *yes ✓*, 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 *yes ✓*, 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	4032	20	100	200	400	Howden engine enclosed	Puffin	
AUXILIARY	39617	7 1/2	100	75	425	Robey	"	
EMERGENCY								
<i>Generators made by Messrs Campbell & Lohwood</i>								
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.				
5106	MAIN GENERATOR	2	.1824	37	.14	200	10 ft	V. I. R.	Iron Pipes
4456	AUXILIARY GENERATOR	2	.0937	19	.14	75	10 ft	"	"
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0225	7	.064		20 ft	V. I. R.	Lead covered & Armoured
	BOILER ROOM								
	WIRELESS	2	.0225	7	.064	15	220 ft	V. I. R.	Lead covered & Armoured
	SEARCHLIGHT	1	.002	3	.029	1.2	460 "	"	"
	MASTHEAD LIGHT	1	.002	3	.029	1.2	250 "	"	"
	SIDE LIGHTS	1	.002	3	.029	1.2	64 "	"	"
	COMPASS LIGHTS	1	.002	3	.029	.3	30 "	"	"
	POOP LIGHTS	1	.002	3	.029	.6	20 "	"	"
	CARGO LIGHTS	1	.007	7	.036	3.0	440 "	"	"
	ARC LAMPS								
	HEATERS								

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								
	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								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
12459	WORKSHOP MOTOR	1	.0225	7	.064	40	40 ft	V. I. R.	Lead covered & Armoured
	VENTILATING FANS								
47085	Turning Mastica	1	.0225	7	.064	40	80 "	"	"
5086	Keel Fan	1	.0225	7	.064	40	180 "	"	"
10047	Keel Fan	1	.002	3	.029	.3	70 "	"	"
12091	Generator Compl	1	.002	3	.029	.3	20 "	"	"
E. 50862	Oil Separator	1	.002	3	.029	.5	70 "	"	"
	Boiler	1	.0225	7	.064	30	240 "	"	"

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.

FURNESS SHIPBUILDING CO. LIMITED

P. S. Glover

Electrical Engineers.

Date *26th May 1923*

COMPASSES.

Distance between electric generators or motors and standard compass *140 ft. approx*

Distance between electric generators or motors and steering compass *130 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *6* Ampères *3* feet from standard compass feet from steering compass.

A cable carrying *3* Ampères *inside* feet from standard compass 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 *found not up to standard* *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.

For FURNESS SHIPBUILDING CO. LIMITED,

John C. Martin

Builder's Signature.

Date *26th May 1923*

Secretary.

John Commen N. 11481

S.S. Felicianá - Pft. N. 11282

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *S.S. London Commen - Pft. N. 11481*

General Remarks (State quality of workmanship, opinions as to class, &c.)

This installation has been fitted in accordance with the Rules: is of good materials and workmanship and on completion was examined under full working conditions and found satisfactory

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

J.W.D.
9/7/23

Total Capacity of Generators *27½* Kilowatts

The amount of Fee ... £ *21-5-0* { When applied for, *6.6.19.23*
 Travelling Expenses (if any) £ : : { When received, *19.23*

Wm Morrison

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 8. 22. - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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