

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

-9 SEP 1925

Date of writing Report 12-8-1925 When handed in at Local Office 3-9-1925 Port of Middlesbrough

No. in Survey held at Haverton Hill on Tues Date, First Survey 3-6-25 Last Survey 12-8-1925
Reg. Book. 26588 on the S.S. Manchester Citizen (Number of Visits 6)

Built at Haverton Hill - Tues By whom built Furness S/B Co Ltd Yard No. 80 When built 1925
Owners Messrs Manchester Liners Ltd Port belonging to Manchester
Tons { Gross 5110
Net 3065

Electric Light Installation fitted by Furness Shipbuilding Co Ltd Contract No. 80 When fitted 1925

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 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 -, 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 Starboard side of Engine Room Bottom Platform

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 Starboard side of Engine Room Aft Bulkhead

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 -, 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. switches fuse

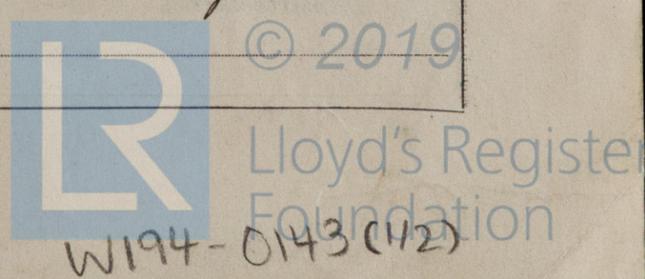
for Generator & each outgoing circuit. Removable porcelain fuses

Instruments on main switchboard 1 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 switch & 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 *Both* 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

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 the underside of upper deck along Hatch coaming. All cables which are exposed are lead covered armoured braided*

Support and Protection of Cables, state how the cables are supported and protected *Lead covered armoured cables are supported by means of Galv iron clips. Lead covered cables supported by brass clips. If cables are run in wood casings, are the casings and caps secured by screws - are the cap screws of brass - are the cables run in separate grooves - 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 *Porcelain junction boxes protected with cast iron 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 *Dynamo .0600 Swba .0600* 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

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 stowholds 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 -

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 - 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

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	1	15	110	136	400	Rotary enclosed type		
AUXILIARY						forced lubrication		
EMERGENCY						engine		
ROTARY TRANSFORMER						Dynamo by Morse Campbell & Isherwood		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
ENG. 42016 DYN. 5380	MAIN GENERATOR...	2	.1500	37	.072	150	38'	V. I. R	Lead cov. Arm. & braided
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0100	7	.044	27.1	26'	"	" " "
	BOILER ROOM	2	.0100	7	.044	27.1	26'	"	" " "
	CREW	2	.0100	7	.044	13.0	600'	"	" " "
	NAVIGATION (INST)	2	.0225	7	.064	6.0	380'	"	" " "
	MIDSHIP	2	.0225	7	.064	21.5	300'	"	" " "
	TWEEN DECKS	2	.0100	7	.044	26.2	28'	"	" " "
	WIRELESS	2	.0100	7	.044	4.6	350'	V. I. R	Lead covd.
	SEARCHLIGHT	2	.002	3	.029	.9	380'	"	Lead covd. & braided
	MASTHEAD LIGHT	2	.002	3	.029	.9	700'	"	" " "
	SIDE LIGHTS	2	.002	3	.029	.9	100'	"	Lead covd. in tubing
	COMPASS LIGHTS	2	.002	3	.029	.6	60'	"	Lead covered
	POOP LIGHTS	2	.002	3	.029	1.1	80'	"	Lead covered
	CARGO LIGHTS	2	.0100	7	.044	14.5	400'	"	Lead covered
	ARC LAMPS	2	.0100	7	.044	14.5	200'	"	Lead covered
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	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								
	WORKSHOP MOTOR								
850	VENTILATING FANS	1	.003	3	.036	3.2	400'	V. I. R	Lead covd. arm'd & braided
	FOUNDING MACHINE	1	.0100	7	.044	15.0	190'	"	Lead covered

* Less Cargo lights at sea.
 " Navigation lights, wireless & sounding machine in port.

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 FURNESS SHIPBUILDING Co. LIMITED.

P. S. Glover

Electrical Engineers.

Date *1st Sept 1925*

COMPASSES.

Distance between electric generators or motors and standard compass *120' Approx* ✓

Distance between electric generators or motors and steering compass *110'* ✓

The nearest cables to the compasses are as follows:—

A cable carrying *6* Ampères *3* feet from standard compass *4* feet from steering compass. ✓

A cable carrying _____ Ampères _____ 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 *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.

J. M. Gouern

Builder's Signature.

Date *1st Sept 1925*

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *"Manchester Commerce"*
(mat 12407)

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

This installation has been fitted in accordance with the Rules; is of good material and workmanship and on completion was examined under full load and found satisfactory.

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

P.S.
11/9/25
[Signature]

Total Capacity of Generators *15* Kilowatts

The amount of Fee ... £ *15* : - : *20 8* 19 *25*
 Travelling Expenses (if any) £ : : *2 10* 19 *25*

W. H. Roberts
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

5c, 12, 13.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)