

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office -1 MAY 1929

Date of writing Report 30. 4. 1929 When handed in at Local Office 30. 4. 1929 Port of Middlesbrough

No. in Survey held at Haverton Hill on Tees Date, First Survey 25 Jan'y Last Survey 18. 4. 1929
Reg. Book. (Number of Visits 13)

90327 Supn the S. S. Gypsum Empress

Tons Gross 4034 Net 2070

Built at Haverton Hill on Tees By whom built Furness Shipbuilding Co Ltd Yard No. 144 When built 1928/9

Owners Gypsum Packet Co Port belonging to Middlesbrough

Electric Light Installation fitted by Furness Shipbuilding Co Ltd Contract No. 144 When fitted 1929

System of Distribution Double wire ✓

Pressure of supply for Lighting 110 volts, Heating - volts, Power - volts.

Direct or Alternating Current, Lighting D.C. ✓ Power -

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. Level ✓, 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 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 Starboard side of Engine Room ✓

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 Starboard side of Engine Room on fwd side of Engineers Store -

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 micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework -

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 Triple pole circuit

Breaker for each generator. Double pole switch of 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 2-10 watt lamps in series across bus bars & middle point earthed.

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 ✓

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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *4.5 V.*

Cable Sockets and other connections, are the ends of all cables having a sectional area of .004 square inch and above provided with soldering sockets

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. *Main feeder cables are run through galv iron pipes & are supported by means of galv iron clips. Cables in exposed positions are lead covered & armoured & braided. Lead covered cables are supported by means of brass clips & screws.*

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 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. *Porcelain connections in wpt. Boxes*

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. *Earthing connections 50% in area of main feeder cables fitted*, 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*

Secondary Batteries, are they constructed and fitted as per Rule

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

where are the controlling switches situated

Searchlight Lamps, No. of *1*, whether fixed or portable *fixed*, are their fittings as per Rule *yes*

Arc Lamps, other than searchlight lamps, No. of *0*, are their live parts insulated from the frame or case, are their fittings as per Rule

Motors, are their working parts readily accessible, are the coils self-contained and readily removable for replacement

are the brushes, brush holders, terminals and lubricating arrangements as per Rule, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material

are they protected from mechanical injury and damage from water, steam or oil, are their axes of rotation fore and aft, 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

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	10	110	91.0	500	Bunderland Forge Co Lead type Engines Steam.		
AUXILIARY	1	5	110	45.5	550			
EMERGENCY								
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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
E. D. 404 D. D. 664	MAIN GENERATOR...	2	.0400	19	.052	91.0	60'	YARNISHED CAMBRIC	Lead covered armoured and braided.
E. D. 504 D. D. 654	EQUALISER CONNECTIONS	1	.0225	7	.064	50	30'		
	AUXILIARY GENERATOR	2	.0225	7	.064	45.5	54'		
	EMERGENCY GENERATOR	1	.0100	7	.044		27'		
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0100	7	.044	12.5	16'	Y. I. R.	Lead covered armoured and braided
	BOILER ROOM	2	.0100	7	.044	12.5	16'		
	ACCOMMODATION FWD & NAV.	2	.0600	19	.064	12.0	600'		
	" CREW	2	.0100	7	.044	8.5	120'		
	" ENG & PA35	2	.0225	7	.064	16.8	140'		
	SPERRY EQUIP.	2	.0100	7	.044	10.0	550'		
	WHISTLE	2	.0020	3	.029	5.0	580'	Y. I. R.	Lead covered armoured and braided
	WALKER'S LOG	2	.0020	3	.029	2.0	800'		
	WIRELESS	2	.0100	7	.044	5.0	580'		
	SEARCHLIGHT	2	.0030	3	.036	8.0	100'		
	MASTHEAD LIGHT	2	.0020	3	.029	1.36	100'		
	SIDE LIGHTS	2	.0020	3	.029	.36	60'		
	COMPASS LIGHTS	2	.0020	3	.029	.1	24'		
	PORT LIGHTS	2	.0020	3	.029	.36	40'		
	CARGO LIGHTS	2	.0100	7	.044	13.0	180'		
	ARC LAMPS								
	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—								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS								

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.

F. F. FURNESS SHIPBUILDING CO. LIMITED

P. J. Power

Electrical Engineer.

Date *29th April 1929*

COMPASSES.

Distance between electric generators or motors and standard compass *250'*
 Distance between electric generators or motors and steering compass *240'*
 The nearest cables to the compasses are as follows:—
 A cable carrying *1* Ampères *3* feet from standard compass *3* 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.

F. F. FURNESS SHIPBUILDING CO. LIMITED

R. Boardman

Builder's Signature.

Date *29th April 1929*

Is this installation a duplicate of a previous case If so, state name of vessel

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

*The materials and workmanship are good.
 This electric light installation has been fitted under special survey and in accordance with the Rules, and has been tested under working conditions with satisfactory results. In my opinion it is suitable for a vessel classed with this Society.*

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

*YRM
 6.5.29*

Total Capacity of Generators *15* Kilowatts.

The amount of Fee ... £ *15-0-0* When applied for, 20 April 1929

Travelling Expenses (if any) £ *17-5-29* When received, 1929

P. J. Man

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned *Elec. light*

Im. 228.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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