

Rpt. 13.

No. 28772

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

MILMAY. 11 1924

Date of writing Report 10 When handed in at Local Office 30 APR 1924 Port of SUNDERLAND.

No. in Survey held at SUNDERLAND. Date, First Survey 17th May 1924 Last Survey 17th May 1924
 Reg. Book. S.S. "Pacific Shipper" (Number of Visits.....)

on the S.S. "Pacific Shipper" Tons { Gross 6304 Net 3850

Built at SUNDERLAND. By whom built W. Doxford & Sons Yard No. 577 When built 1924.

Owners Furness, Withy & Co. Ltd. Port belonging to London.

Electric Light Installation fitted by The Sunderland Dock & Eng. Co. Ltd. Contract No. When fitted 1924.

System of Distribution TWO WIRE

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

Direct or Alternating Current, Lighting DIRECT. 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 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 Yes, 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 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 —, 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 close to generators in engine room.

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 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 double pole switches & fuses for both generators, the equaliser switches being interlocked with the main switches; double pole switches & fuses for motor circuits, & single pole switches & double pole fuses for branch lighting circuits.

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 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.

See also alterations made at Glasgow 10.29

6 APR 1924



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Insulation of Cables, state type of cables, single or twin single s 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 3 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 yes.

Support and Protection of Cables, state how the cables are supported and protected lead covered armoured & braided cables clipped to beams & decks.

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 —.

Joints in Cables, state if any, and how made, insulated, and protected no joints 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 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 —.

—, are their connections made as per Rule —.

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule —.

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 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 —.

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 —.

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 axis 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 as per Rule —.

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.
MAIN	2	30	110	273	450	Compound enclosed type	
AUXILIARY						Steam engine.	
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.				
	MAIN GENERATOR...	4	0.14780	37	0.92	273	40	V.I.R.	lead covered
	AUXILIARY GENERATOR	2 in parallel							armoured & braided.
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	0.0701	7	0.36	18.7	50.	V.I.R.	lead covered
	BOILER ROOM								armoured & braided
	ENGINEERS & AFT.	2	0.0146	7	0.44	16.0	120	V.I.R.	lead covered
	SALOON & NAVIGATION.	2	0.0214	7	0.64	30.3	320	V.I.R.	armoured & braided
	CARGO.	2	0.0701	7	0.36	15.3	120	V.I.R.	lead covered
									armoured & braided.
	WIRELESS	2	0.2214	7	0.64	30.	340.	V.I.R.	lead covered
	SEARCHLIGHT	2	0.0194	3	0.29	1.2	300	V.I.R.	armoured & braided.
	MASTHEAD LIGHTS	2	0.0194	3	0.29	1.2	600	V.I.R.	armoured & braided.
	SIDE LIGHTS ... EACH	2	0.0194	3	0.29	1.2	80.	V.I.R.	lead covered.
	COMPASS LIGHTS	2	0.0194	3	0.29	0.6	20.	V.I.R.	lead covered.
	POOP LIGHTS								
	CARGO LIGHTS	2	0.0194	3	0.29	3.0	120.	V.I.R.	armoured & braided.
	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								
	WORKSHOP MOTOR	1	0.0701	7	0.36	16	60	V.I.R.	lead covered armoured & braided.
	VENTILATING FANS								
	FOR REFRIGERATOR	3	0.0600	19	0.64	64	260	V.I.R.	lead covered.
	OIL PURIFIER MOTOR	1	0.0146	7	0.44	24	70	V.I.R.	armoured & braided.

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.

WMM

Electrical Engineers.

Date 16th April 1924

Director.

COMPASSES.

Distance between electric generators or motors and standard compass 130 feet

Distance between electric generators or motors and steering compass 120 feet

The nearest cables to the compasses are as follows:—

A cable carrying 10 Ampères 12 feet from standard compass 10 feet from steering compass.

A cable carrying 6 Ampères led into feet from standard compass 12 feet from steering compass.

A cable carrying 6 Ampères 12 feet from standard compass led into 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.

WILLIAM DOXFORD & SONS, Limited

Builder's Signature.

Date

W. Gallacher

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.)

This installation has been fitted in a satisfactory manner and in accordance with the rules and on completion was tried under working conditions and found satisfactory.

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

W.T. Badger 6/5/24

Total Capacity of Generators 60 Kilowatts

The amount of Fee ... £ 28: 10: ^{When applied for,} 10th March 1924

Travelling Expenses (if any): £ : ^{When received,} 22nd March 1924

W.T. Badger + Co. Hants
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

1m. 3.22.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)