

REPORT ON ELECTRIC FITTINGS

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) SAT. 2 FEB. 1924

Received at London Office.....

Date of writing Report 10 When handed in at Local Office - 1 FEB 1924 Port of SUNDERLAND.

No. in Survey held at SUNDERLAND Date, First Survey Dec 3 Last Survey 11 Jan 1924
Reg. Book. on the S.S. 'PENHALE' (Number of Visits.....5.....)

Built at Sunderland By whom built Sir J. Priestman & Co. Yard No. 286 When built 1924
Owners W. B. Challen & Son, Ltd. Port belonging to Cardiff

Electric Light Installation fitted by Messrs. Campbell & Isherwood Ltd. Contract No. C. 8732 When fitted 1923.

System of Distribution Double Wire.

Pressure of supply for Lighting 100. 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 / , is an adjustable regulating resistance fitted in

series with each shunt field No.

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 under Stairs.

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 Aft Bulkhead of 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 2 feet 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

Main double pole switch and fuses for generator. Single pole switch and double

pole fuses for circuits.

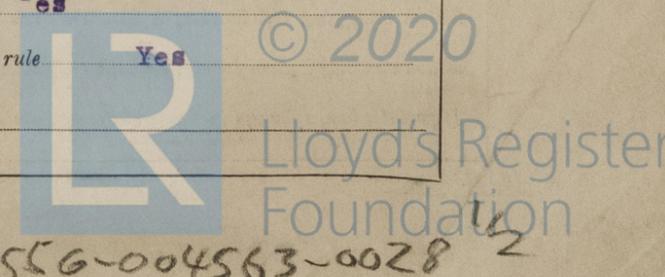
Instruments on main switchboard one ammeters one voltmeters synchronising device for paralleling purposes.

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



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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 Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4 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 Yes

Support and Protection of Cables, state how the cables are supported and protected Cables lead covered clipped up with brass clips. Engine room and Boiler room lead covered and armoured clipped up with galv. iron 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 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 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 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 4 - 1/2" Iron Belts. Holding down belts.

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

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 No

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 1, whether fixed or portable Yes, are their fittings as per Rule Yes

Arc Lamps, other than searchlight lamps, No. of 1, 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 and 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	I	7.5	100	75	Steam Engine			
AUXILIARY								
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	I	.06	19	.064	75	30	V.I.R.	lead covered.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	I	.01	7	.044	6.7	10	V.I.R.	Lead & Armour.
	BOILER ROOM	I	.0015	I	.044	1.5	70	"	" " "
	Engineers & Aft.	I	.01	7	.044	17.7	60	"	" " "
	Saloon.	I	.0225	7	.064	38.6	120	"	" " "
	Forward.	I	.005	3	.036	4.2	120	"	in tubing.
	WIRELESS	I	.007	7	.036	10	150	V.I.R.	in tubing.
	SEARCHLIGHT								
	MASTHEAD LIGHT	I	.002	3	.029	1.1	200	"	" " "
	SIDE LIGHTS	I	.003	I	.016	1.1	60	"	lead covered.
	COMPASS LIGHTS	I	.0075	I	.044	.2	20	"	" " "
	POOP LIGHTS	7	.0045	7	.029	9.3	120	"	in tubing.
	CARGO LIGHTS	I	.0015	I	.044	5.5	40	"	" " "
	ARC LAMPS								
	HEATERS	I	.0045	7	.029	10	40	"	lead covered

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								
	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.

CAMPBELL & ISHERWOOD, LTD.

PER

Thomas Meade

Electrical Engineers.

Date *23rd Jan 1924*

COMPASSES.

Distance between electric generators or motors and standard compass *about 150 feet*

Distance between electric generators or motors and steering compass *" "*

The nearest cables to the compasses are as follows:—

A cable carrying *.3* Ampères *1* feet from standard compass *1* feet from steering compass.

A cable carrying *1.1* Ampères *3* feet from standard compass *6* feet from steering compass.

A cable carrying *5.5* Ampères *15* feet from standard compass *15* 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.

B. CHELLEW STEAM NAVIGATION CO. LTD.

Rich E Rapson

Owners

Builder's Signature.

Date *31/1/24*

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *"Pendean"*

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

This electric light installation has been fitted in a satisfactory manner and in accordance with the rules and has been tried under working conditions with satisfactory results.

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

JWD
5/2/24

Total Capacity of Generators *7.5* Kilowatts

The amount of Fee ... £ *8* : : *When applied for, 10th Jan 1924*
 Travelling Expenses (if any) £ : : *When received, See debit book.*

G.A. Hark

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 322.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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