

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27294

Port of SUNDERLAND Date of First Survey 4 June Date of Last Survey 2 June '18 No. of Visits 2
 No. in on the Iron or Steel S.S. Wulstey Castle Port belonging to Liverpool
 Reg. Book 1364 Built at Sunderland By whom John Blumer & Co. When built 1918.
 Owners Lancashire Shipping Co. Ltd. (Messa) Chamber Owners' Address 37 5 King Street Liverpool
 Yard No. 240 Electric Light Installation fitted by H.T. Boothroyd Ltd. Bootle When fitted 1918.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Turbo-Generator

Capacity of Dynamo 166 Amperes at 60 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board Near dynamo having switches to groups Six and one of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each None fitted. for Marconi

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch board to the cables of auxiliary circuits Yes and at each position where a cable is branched or reduced in size Yes and to each lamp circuit Yes
 If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes
 Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 100 per cent over the normal current
 Are all fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit Yes.
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes.

Total number of lights provided for 152 arranged in the following groups :-
 A 30 lights each of 16 candle power requiring a total current of 10 Amperes
 B 29 lights each of 16 candle power requiring a total current of 10 Amperes
 C 33 lights each of 16 candle power requiring a total current of 11 Amperes
 D 30 lights each of 16 candle power requiring a total current of 10 Amperes
 E lights each of candle power requiring a total current of Amperes
3 Mast head light with 3/2 lamps each of 32 candle power requiring a total current of 3.3 Amperes
2 Side light with 1 2 1/2 lamps each of 32 candle power requiring a total current of 2.2 Amperes
5 Clusters Cargo lights of 5-16 cp. each candle power, whether incandescent or arc lights Incandescent

If arc lights, what protection is provided against fire, sparks, &c. No arcs fitted
Three 500 Watt half-watt lamps fitted in engine room
 Where are the switches controlling the masthead and side lights placed In Wheel house on Bridge

DESCRIPTION OF CABLES.

Main cable carrying 166 Amperes, comprised of 37 wires, each 13 S.W.G. diameter, .25 square inches total sectional area
 Branch cables carrying 25 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area
 Branch cables carrying 11 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area
 Leads to lamps carrying 4 to 1 1/2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 5 1/2 Amperes, comprised of 7 wires, each 22 S.W.G. diameter, .0042 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables covered with V.I.R. Taped, Lead Covered and in exposed places armoured with galv. steel wire or carried in tube where necessary
 Joints in cables, how made, insulated, and protected No joints except mechanical ones.
 Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances — Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage Yes.
 Are there any joints in or branches from the cable leading from dynamo to main switch board No.
 How are the cables led through the ship, and how protected Lead covered and Armoured and efficiently clipped to iron-work of ship.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered and armoured or in tube as found necessary.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat ditto

What special protection has been provided for the cables near boiler casings ditto

What special protection has been provided for the cables in engine room ditto

How are cables carried through beams Lead & Fibre Bushes through bulkheads, &c. Watertight Glands

How are cables carried through decks Watertight steel deck tubes

Are any cables run through coal bunkers No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead covered & armoured

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Portables only.

If so, how are the lamp fittings and cable terminals specially protected Heavy cast-iron boxes & guards.

Where are the main switches and fuses for these lights fitted In the engine room.

If in the spaces, how are they specially protected —

Are any switches or fuses fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable How fixed To Watertight Box Connectors

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel —

How are the returns from the lamps connected to the hull —

Are all the joints with the hull in accessible positions —

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes, fixed On Switchboard

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas —

Are any switches, fuses, or joints of cables fitted in the pump room or companion —

How are the lamps specially protected in places liable to the accumulation of vapour or gas —

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

H. T. Bothwell Limited, Electrical Engineers Date 14 June 18.
J. Whitehead.

COMPASSES.

Distance between dynamo or electric motors and standard compass About 92 feet

Distance between dynamo or electric motors and steering compass " 88 "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1/2</u>	Amperes	<u>In Instrument</u>	feet from standard compass	<u>In Instrument</u>	feet from steering compass
A cable carrying	<u>1 1/4</u>	Amperes	<u>6</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>5</u>	Amperes	<u>12</u>	feet from standard compass	<u>9</u>	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power Yes

The maximum deviation due to electric currents, etc., was found to be nil degrees on any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

John Blumer Builder's Signature. Date 20 June 1918

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel, tested at full load and found good.

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

J. J. Davis
5-9-18
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.