

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27021

Port of SUNDERLAND Date of First Survey 26 June Date of Last Survey 6 July 17 No. of Visits 3
 No. in Reg. Book on the Iron or Steel S. S. Aberdeen Port belonging to Sunderland S'g. Coy. Ltd.
 Built at SUNDERLAND By whom Sunderland S'g. Coy. Ltd. When built 1914
 Owners Sunderland S'g. Coy. Ltd. Owners' Address Sunderland
 Yard No. 292 Electric Light Installation fitted by The Sunderland Forge Engineering Coy. Ltd. When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant consisting of single cylinder open type vertical engine 4" x 5" - 250 r.p.m. 100 H.P. coupled to compound wound multipolar dynamo.

Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Eng. Rm. - Bolt. Haff. - Starb. side Whether single or double wire system is used double

Position of Main Switch Board close to dynamo having switches to groups four of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each in Chart Room with 5 switches for navigation lights

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 No 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 147 arranged in the following groups:—

A Saloon <u>Nav.</u>	= 51 lights each of	16	candle power requiring a total current of	28.6	Amperes
B Wireless	= - lights each of	-	candle power requiring a total current of	15	Amperes
C Eng. Rm.	= 52 lights each of	16	candle power requiring a total current of	29.1	Amperes
D Cargo <u>Deck</u>	= 44 lights each of	16	candle power requiring a total current of	24.6	Amperes
E	lights each of		candle power requiring a total current of		Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.24	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2.24	Amperes
5 Cargo lights of	Six - 16		candle power, whether incandescent or arc lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c. None fitted

Where are the switches controlling the masthead and side lights placed in Chart Room

DESCRIPTION OF CABLES.

Main cable carrying 90 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area
 Branch cables carrying 28.6 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Branch cables carrying 29.1 Amperes, comprised of 4 wires, each 18 S.W.G. diameter, .025 square inches total sectional area
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 5 Amperes, comprised of 4 wires, each 21½ S.W.G. diameter, .0049 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Mains Pure & Vulc. I.R. - taped - vulcanized - then Braided & compounded

Machinery Spaces ditto - then Armoured & Braided

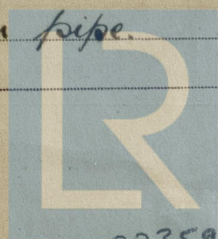
Cabin Acc. ditto - then Lead covered

Joints in cables, how made, insulated, and protected None

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 -

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 I. I. R. cable run in pipe



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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 V.I.R. cable run in pipe.

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

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 Holes lashed with fibre through bulkheads, &c. W. T. Glands.

How are cables carried through decks W. T. 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 V. I. R. run in pipe.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage No.

If so, how are the lamp fittings and cable terminals specially protected —

Where are the main switches and fuses for these lights fitted —

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 —

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 main S.B. —

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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.,

Electrical Engineers

Date July 16th 19

COMPASSES.

Distance between dynamo or electric motors and standard compass abt. 120 ft.

Distance between dynamo or electric motors and steering compass abt. 120 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 11.2 Amperes about 10 feet from standard compass abt. 10 feet from steering compass

A cable carrying .56 Amperes led into feet from standard compass abt. 4 feet from steering compass

A cable carrying .56 Amperes abt. 4 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.

The maximum deviation due to electric currents, etc., 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.

FOR THE SUNDERLAND SHIP BUILDING CO., LTD.

Builder's Signature. Date —

GENERAL REMARKS.

This installation has been fitted in accordance with the requirements, and has been tried under full power with satisfactory results. In my opinion this vessel is eligible for the record of Elec Light.

It is submitted that
this vessel is eligible for
THE RECORD. Elec light. J.W.D.
21/7/17.

Charles Cooper
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute —