

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12968.

Port of Aberdeen Date of First Survey 4.10.21 Date of Last Survey 16.2.22 No. of Visits 14
 No. in on the ~~Iron~~ Steel S.S. "DRACO" Port belonging to Hull
 Reg. Book 34014 IN.S. Built at Aberdeen By whom Yall Russell & Co Ltd When built 1922
 Owners Ellerman's Wilson Line Ltd. Owners' Address Hull
 Yard No. 680 Electric Light Installation fitted by Sunderland Forge & Engineering Co Ltd. When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant consisting of single cylinder vertical speed type inverted engine
 100 lbs steam 350 revs coupled to compound wound multipole dynamo.

Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed in Engine Room Starboard side Whether single or double wire system is used double

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

Positions of auxiliary switch boards and numbers of switches on each In chart room with switches controlling
 Port, Starboard, Foremast, Mainmast, Compasses, Telegraphs & Morse Lamp.

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 128 @ 16 W. arranged in the following groups:—

A Navigation Saloon	34 lights each of	16	candle power requiring a total current of	20.4	Amperes
B Accommodation	36 lights each of	—	candle power requiring a total current of	21.6	Amperes
C Cargo.	33 lights each of	—	candle power requiring a total current of	19.8	Amperes
D Engine & Boiler room	25 lights each of	—	candle power requiring a total current of	15.0	Amperes
E Stowage	lights each of	—	candle power requiring a total current of	—	Amperes
2 Mast head lights with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes
2 Side light with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes
5 Cargo lights of	6 - 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 80 Amperes, comprised of 19 wires, each .085 S.W.G. diameter, .10 square inches total sectional area
 Branch cables carrying 21.6 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .02 square inches total sectional area
 Branch cables carrying 15.0 Amperes, comprised of 7 wires, each .036 S.W.G. diameter, .007 square inches total sectional area
 Leads to lamps carrying .6 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main Machinery Spaces: Pure & Silica: 1 lb. Japex & Sulcanol then Lead covered & Armoured
 Accommodation Spaces: — " — " — " — " then Lead covered.

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

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 None made.

How are the cables led through the ship, and how protected Lead covered & Armoured cable clipped to beams



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 & armoured

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

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

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

How are cables carried through beams Holes bushed with fibre through bulkheads, &c. W/T. Glauk.

How are cables carried through decks W/T. Deck Tubes.

Are any cables run through coal bunkers — 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 -

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 -

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 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 2500 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 8th February 1922

COMPASSES.

Distance between dynamo or electric motors and standard compass 120 feet

Distance between dynamo or electric motors and steering compass 115 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>20.4</u>	Amperes	<u>10</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>.6</u>	Amperes	<u>6</u>	feet from standard compass	<u>led into</u>	<u>from steering compass</u>
A cable carrying		Amperes	<u>led into</u>	<u>from</u> standard compass	<u>10.</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.

FOR HALL, RUSSELL & CO., LTD.

James Hunter DIRECTOR.

Builder's Signature. Date 8th March 1922

GENERAL REMARKS.

The various parts of the installation were examined during the fitting on board: the materials, and workmanship are good and on completion the light was tried at full power, and everything found satisfactory.

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

See £ 8.0.0.

paid 16/3/22

L.Y. 17/3/22.

C.W.S.

Ridley J. Howell.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 21 MAR. 1922

2m.11.18.—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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