

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 40215

Port of Glasgow. Date of First Survey 30/1/00 Date of Last Survey 12/7/00 No. of Visits 8.
 No. in Reg. Book 332426 on the ~~Iron~~ Steel T.S.S. "Highland Warrior" Port belonging to London.
 Built at Whiteinch By whom Messrs Barclay Curle & Co When built 1900
 Owners Messrs Geo. Nelson & Co. Owners' Address _____
 Yard No. 576. Electric Light Installation fitted by Messrs A. Watson & Co Ltd. When fitted 1900.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 8" x 6 Open Type Vertical Steam Engines (Shanks) direct coupled to 2 15 K.W.
 open Type Compound wound Dynamos. Set to run on 100 lbs Steam Pressure at 360 R.P.M.
 Capacity of Dynamo 2 C 150 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Dynamo Room, Tween Deck level, Port. Whether single or double wire system is used Double
 Position of Main Switch Board Adjacent to Dynamos, having switches to groups 11 Circuits of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each None.

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 304. arranged in the following groups:—

A	Turning motor	—	lights each of	—	candle power requiring a total current of	<u>45.00.</u>	Amperes
B	Wireless	—	lights each of	—	candle power requiring a total current of	<u>30.00.</u>	Amperes
C	Engine Brides	<u>76.</u>	lights each of	<u>16.</u>	candle power requiring a total current of	<u>45.60.</u>	Amperes
D	Engine Acc.	<u>49.</u>	lights each of	<u>16 (Metallic)</u>	candle power requiring a total current of	<u>12.80.</u>	Amperes
E	Cargo Lts.	<u>27</u>	lights each of	<u>16.</u>	candle power requiring a total current of	<u>16.20</u>	Amperes
	<u>2</u> Mast head light with	<u>2</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.56</u>	Amperes
	<u>2</u> Side light with	<u>2</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.56.</u>	Amperes
	<u>54</u> Cargo lights of		<u>16 C.P. each.</u>		candle power, whether incandescent or arc lights	<u>Incandescent.</u>	

If arc lights, what protection is provided against fire, sparks, &c. — — — — —

Where are the switches controlling the masthead and side lights placed Whelhouse.

DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 37 wires, each 13 S.W.G. diameter, .250 square inches total sectional area
 Branch cables carrying 29.60 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Branch cables carrying 11.00 Amperes, comprised of 7 wires, each 20. S.W.G. diameter, .007 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18. S.W.G. diameter, .0015 square inches total sectional area
 Cargo light cables carrying 16.20 Amperes, comprised of 7. wires, each 16 S.W.G. diameter, .022 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

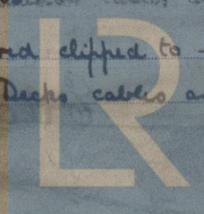
In Machinery Spaces, Cables are V.I.R. lead Covered + Armoured.
 In Accommodation, Cables are V.I.R. & lead Covered.
 In Well Deck, Cables are V.I.R. protected by galv. w.I. Pipe.

Joints in cables, how made, insulated, and protected No joints.

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 in bunks, 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 joints.

How are the cables led through the ship, and how protected In accommodation Cables are lead covered clipped to beams, decks, etc.
 In Machinery Spaces Cables are P.C.A. clipped to beams, Bulkheads etc. In Well Decks cables are V.I.R. in galv. w.I. Pipe the whole being thoroughly watertight.



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. J. R. Cable sheathed with lead and protected by Armouring of G.I. wires

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Covered Armoured Cable

What special protection has been provided for the cables near boiler casings Lead Covered Armoured Cable

What special protection has been provided for the cables in engine room Lead Covered Armoured Cable

How are cables carried through beams In Fibre Ferrules through bulkheads, &c. in W.T. Packing glands

How are cables carried through decks in W.T. Deck Tubes standing 15" above deck level.

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

If so, how are they protected ---

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 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 500 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.

FOR ARCHD. WATSON & CO., LTD.,

Electrical Engineers

Date 13th July 1920.

COMPASSES.

D. Dundas DIRECTOR

Distance between dynamo or electric motors and standard compass 165 ft.

Distance between dynamo or electric motors and steering compass 160 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>11.00</u>	Amperes	<u>6</u>	feet from standard compass	<u>4.</u>	feet from steering compass
A cable carrying	<u>.60</u>	Amperes	<u>2</u>	feet from standard compass	<u>4.</u>	feet from steering compass
A cable carrying	<u>-</u>	Amperes	<u>-</u>	feet from standard compass	<u>-</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 BARCLAY, CURLE & CO., LTD.

R. A. Creevy Secretary

Builder's Signature.

Date 15th July 1920

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory.

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

J. S. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 27 JUL 1920

Elec. Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

HC
26.7.20

Im. 7.10.—Transfer.