

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 34100

Port of Glasgow Date of First Survey 24.4.14 Date of Last Survey 3.6.14 No. of Visits 10
 No. in 1688 on the Iron or Steel s/s Spectator Port belonging to Liverpool
 Built at Glasgow By whom E. Connell & Co. Ltd. When built 1914
 Owners Charnitz & Co. Ltd. (T. & A. Connell) Owners' Address Liverpool
 Yard No. 359 Electric Light Installation fitted by Campbell Hetherwood & Co. When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1. Messrs W. H. Allen & Sons 7" x 6" open engine direct coupled
to 4 pole compound wound dynamo.

Capacity of Dynamo 100 Amperes at 62 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine room. Whether single or double wire system is used Single

Position of Main Switch Board ditto. having switches to groups 3 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine room 5 Chartroom 5

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 —

Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 50 to 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 93 STBCP arranged in the following groups:—

A	19	lights each of	16	candle power requiring a total current of	19	Amperes
B	24	lights each of	16	candle power requiring a total current of	24	Amperes
C	27	lights each of	16	candle power requiring a total current of	27	Amperes
D	20 (Cargo)	lights each of	16	candle power requiring a total current of	20	Amperes
E	(Hull)	lights each of		candle power requiring a total current of	—	Amperes
1	Mast head light with	1	lamps each of	32	candle power requiring a total current of	2
2	Side light with	2	lamps each of	32	candle power requiring a total current of	4
5	Cargo lights of each of	5	2 16	candle power, whether incandescent or arc lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c. 2 - 252 Arc lamps, each protected by lantern fitted with glass panes and wire netting

Where are the switches controlling the masthead and side lights placed Chartroom

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .0944 square inches total sectional area
 Branch cables carrying 80 Amperes, comprised of 19 wires, each 15 S.W.G. diameter, .0765 square inches total sectional area
 Branch cables carrying 20 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0222 square inches total sectional area
 Leads to lamps carrying 2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying 5 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007052 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Engine room. Lead covered armoured and braided wires
Bulwarks & deck ditto ditto and galvanized pipes
Cabin. Vulcanized in wood casings
 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 Pro joints 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 Along decks in tubs, and along bulwarks protected by lead cover and armour.



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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 Lead cover and steel armour.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead cover & steel armour

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 in fibre insulators through bulkheads, &c. trans glands

How are cables carried through decks galvanized iron pipes 18" long

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 Connectors in loops on deck

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

How are the returns from the lamps connected to the hull wires between brass washers bolted by 3/8" screws

Are all the joints with the hull in accessible positions Yes

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

Wm. B. Campbell & Hetherwood & Co. Electrical Engineers Date June 5th 14

COMPASSES.

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

Distance between dynamo or electric motors and steering compass 110

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>10</u>	<u>16</u>	<u>4</u>	
<u>22</u>	<u>30</u>	<u>20</u>	

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

The maximum deviation due to electric currents, etc., was found to be 1/2 degrees on course in the case of the standard compass and 1/2 degrees on course in the case of the steering compass.

For CHARLES CONNELL & CO., Limited.

William A. Connell Builder's Signature. Date 12. 6-14

GENERAL REMARKS.

This installation has been fitted on board under special survey & tested under full working conditions & found satisfactory

It is submitted that this vessel is eligible for THE RECORD Elec. light. W. Gordon Munro Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute GLASGOW 16 JUN. 1914 Elec. Light. C.M.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.