

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 31844

Port of Glasgow Date of First Survey 29.6.12 Date of Last Survey 10.9.12 No. of Visits 13
 No. in Reg. Book 198 on the ~~Iron or Steel~~ T.S.S. "Infanta Isabel" Port belonging to Cádiz
 Built at Port Glasgow By whom Russell & Co. When built 1912
 Owners Comillas, Izquierdo & Co. Owners' Address _____
 Yard No. 633 Electric Light Installation fitted by Bennett & Rutherford When fitted 1912

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single Cylinder Engines coupled to compound wound dynamo

Capacity of Dynamo 300 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Main platform Engine Room Whether single or double wire system is used double

Position of Main Switch Board near dynamo having switches to groups 12 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Fuseboards placed in Forecastle, 1st Class Pantry, 2nd Class Pantry, 3rd Class Pantry, Engine Room, Tween decks

If cut outs 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 cessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all cut outs 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 all one size

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 820 arranged in the following groups:—

| | | | | | | |
|---|--------------|----------------------|------------------------|--|---|--------------------|
| A | <u>144.0</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>103</u> | Amperes |
| B | <u>188.0</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>109</u> | Amperes |
| C | <u>40.0</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>23.3</u> | Amperes |
| D | <u>160.0</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>93.1</u> | Amperes |
| E | <u>25.0</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>14.5</u> | Amperes |
| | <u>2</u> | Mast head light with | <u>1</u> lamps each of | <u>32</u> | candle power requiring a total current of | <u>1.1</u> Amperes |
| | <u>2</u> | Side light with | <u>1</u> lamps each of | <u>32</u> | candle power requiring a total current of | <u>1.1</u> Amperes |
| | <u>4</u> | Cargo lights of | <u>64</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 Wheel House

DESCRIPTION OF CABLES.

Main cable carrying 300 Amperes, comprised of 34 wires, each 12 L.S.G. diameter, .314 square inches total sectional area
 Branch cables carrying 51.6 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0612 square inches total sectional area
 Branch cables carrying 40.0 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .0467 square inches total sectional area
 Leads to lamps carrying 2.5 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .00322 square inches total sectional area
 Cargo light cables carrying 3 Amperes, comprised of 7 wires, each 22 L.S.G. diameter, .0043 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with Pure & Vulcanizing India Rubber, Taped. The whole vulcanized together & covered with lead over all. Where Arm'd cables are used, covered as above and armoured with gal'd iron wires.

Joints in cables, how made, insulated, and protected No joints, mechanical boxes used

Are all the joints of cables thoroughly soldered, resin only having been used as a flux — 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 Armoured.



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 Armoured
master wires in Galv tubes.

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

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

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

How are cables carried through beams By ferrules through bulkheads, &c. W.T. Glands

How are cables carried through decks Iron deck pipes & troughs

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

If so, how are they protected Armoured

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 cut outs for these lights fitted —

If in the spaces, how are they specially protected —

Are any switches or cut outs 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 —

The installation is — supplied with 3 voltmeters and 3 amperemeters fixed on Main Switch

VESSELS BUILT FOR CARRYING PETROLEUM.

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

Are any switches, cut outs, 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 99.7 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 megohms per statute mile after 24 hours' immersion in seawater.

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.

Bennett & Rutherford Electrical Engineers Date 13th Sept 1912

COMPASSES.

Distance between dynamo or electric motors and standard compass 100 feet

Distance between dynamo or electric motors and steering compass 100 feet

The nearest cables to the compasses are as follows:—

| | | |
|-----------------------------------|-------------------------------------|-------------------------------------|
| A cable carrying <u>H</u> Amperes | <u>7</u> feet from standard compass | <u>H</u> feet from steering compass |
| A cable carrying <u>I</u> Amperes | <u>7</u> feet from standard compass | <u>H</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 No

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

W. H. Hardener-Smith Builder's Signature. Date —

GENERAL REMARKS. The electric lighting of this vessel so far as carried out on the Clyde is satisfactory but the vessel left requiring a number of fuse boxes to be fitted up & connections made & the entire installation tried under steam. Workmen accompanied the vessel to Cadiz to complete the surveyors at that point has been advised. Glasgow letter 11/9/12 & London letter 12/9/12.

W. H. Hardener-Smith
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute GLASGOW 24 SEP. 1912
Referred for comp.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

23/9/12
E.L.

