

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 25513

Port of Hull Date of First Survey Sep. 11<sup>th</sup> Date of Last Survey Sep. 23<sup>rd</sup> No. of Visits 5  
 No. in Reg. Book 174 sup. on the ~~Iron or Steel~~ Sc. K. "G. E. FOSTER" Port belonging to Grimby  
 Built at Selly By whom Cochrane & Sons When built 1912  
 Owners Atkin Construction Coy. Owners' Address \_\_\_\_\_  
 Yard No. \_\_\_\_\_ Electric Light Installation fitted by Campbell & Sturwood When fitted 1912

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Campbell & Sturwood four pole compressed air engine driven dynamo well coupled to a Roby engine -

Capacity of Dynamo 30 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Starboard side of engine room Whether single or double wire system is used Single

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

Positions of auxiliary switch boards and numbers of switches on each Wheelhouse 4, Engine room 5, and a switch in a convenient position to each light.

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 vessel 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 45 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 Yes.

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

Total number of lights provided for 43 of 16 & 6 of 32 arranged in the following groups :-

- A Forward lights each of 12 of 16 candle power requiring a total current of 6 Amperes
- B Midships lights each of 18 of 16 & 5 of 32 candle power requiring a total current of 14 Amperes
- C Aft lights each of 6 of 16 candle power requiring a total current of 3 Amperes
- D Aft lights each of 7 of 16 & 1 of 32 candle power requiring a total current of 4.5 Amperes
- E lights each of \_\_\_\_\_ candle power requiring a total current of \_\_\_\_\_ Amperes
- 3 Mast head light with 1 lamps each of 32 candle power requiring a total current of Included in B. Amperes
- 2 Side light with 1 lamps each of 32 candle power requiring a total current of \_\_\_\_\_ Amperes
- 3 Cargo lights of 5 of 16 candle power, whether incandescent or arc lights Incandescent.

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

Where are the switches controlling the masthead and side lights placed \_\_\_\_\_

## DESCRIPTION OF CABLES.

Main cable carrying 27.5 Amperes, comprised of 4 wires, each 15 L.S.G. diameter, .028 square inches total sectional area

Branch cables carrying 14 Amperes, comprised of 7 wires, each 17 L.S.G. diameter, .017 square inches total sectional area

Branch cables carrying 6 Amperes, comprised of 7 wires, each 20 L.S.G. diameter, .004 square inches total sectional area

Leads to lamps carrying 1.5 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area

Cargo light cables carrying 2.5 Amperes, comprised of 60 wires, each 30 L.S.G. diameter, .0033 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber protected in cabins by lead cover & braid in engine room & exposed places by lead cover armour & braid.

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

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

Are there any joints in or branches from the cable leading from dynamo to main switch board Yes

How are the cables led through the ship, and how protected In cabins lead covered secured with brass saddle clips. In engine, boiler, & fish rooms lead covered armoured & braided secured with iron clips.



**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 wiring, armour & braid.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead wiring, armour & braid.*

What special protection has been provided for the cables near boiler casings *Lead wiring, armour & braid.*

What special protection has been provided for the cables in engine room *Lead wiring, armour & braid.*

How are cables carried through beams *Fibre ferrules.* through bulkheads, &c. *Slings.*

How are cables carried through decks *Rubber pipes flanged to decks.*

Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes.*

If so, how are they protected *Lead wiring, armour & braid.*

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 *Special sockets in W.T.C.I. box.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Tap bolt of ample size.*

How are the returns from the lamps connected to the hull *Tap screws in deck.*

Are all the joints with the hull in accessible positions *Yes.*

The installation is *also* supplied with a voltmeter and *also* an amperemeter, fixed *on main board.*

**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 *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *1000* 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.

*Campbell & Isherwood* Electrical Engineers Date *Oct 7 1912*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	<i>5</i>	Amperes	<i>1</i>	feet from standard compass	<i>1</i>	feet from steering compass
A cable carrying	<i>14</i>	Amperes	<i>6</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying		Amperes		feet from standard compass		feet from steering compass

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 \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

*Bochrance & Sons* Builder's Signature. Date

**GENERAL REMARKS.** *This installation of electric light has been fitted on board, the materials & workmanship are good & it has been tried satisfactorily under full working conditions.*

*It is submitted that this vessel is eligible for THE RECORD. Elec. light.* *JWD* 17/10/12 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute TUE. OCT. 15. 1912

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

