

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

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No. 27315

Port of Hull Date of First Survey Feb. 19<sup>th</sup> Date of Last Survey Mar 9<sup>th</sup> 14 No. of Visits 4  
 No. in on the ~~Iron~~ Steel P. N. "ANGELUS" Port belonging to Grimby  
 Reg. Book 9749pt. Built at Silly By whom Lockhart & Sons Ltd. When built 1914  
 Owners White & Willows Owners' Address Grimby  
 Yard No. 592 Electric Light Installation fitted by Messrs. J. Jamison & Co. When fitted 1914

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Enclosed steam engine direct coupled to enclosed dynamo

Capacity of Dynamo 80 Amperes at 26 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed in engine room Whether single or double wire system is used Double  
 Position of Main Switch Board " having switches to groups 8 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 1 in bridge for sailing lights &  
simply single local switches

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

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 80% 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

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

Total number of lights provided for 60 arranged in the following groups:—

|   |           |                      |           |   |           |  |                     |         |
|---|-----------|----------------------|-----------|---|-----------|--|---------------------|---------|
| A | <u>24</u> | lights each of       | <u>25</u> | candle power requiring a total current of | <u>30</u> | Amperes  |                     |         |
| B | <u>6</u>  | lights each of       | <u>25</u> | candle power requiring a total current of | <u>8</u>  | Amperes  |                     |         |
| C | <u>16</u> | lights each of       | <u>25</u> | candle power requiring a total current of | <u>20</u> | Amperes  |                     |         |
| D | <u>2</u>  | lights each of       |           | candle power requiring a total current of |           | Amperes  |                     |         |
| E |           | lights each of       |           | candle power requiring a total current of |           | Amperes  |                     |         |
|   | <u>3</u>  | Mast head light with | <u>3</u>  | lamps each of                             | <u>32</u> | candle power requiring a total current of        | <u>6</u>            | Amperes |
|   | <u>2</u>  | Side light with      |           | lamps each of                             |           | candle power requiring a total current of        | <u>4</u>            | Amperes |
|   | <u>8</u>  | Cargo lights of      |           |   |           | candle power, whether incandescent or arc lights | <u>incandescent</u> |         |

If arc lights, what protection is provided against fire, sparks, &c. None

Where are the switches controlling the masthead and side lights placed in bridge house

## DESCRIPTION OF CABLES.

Main cable carrying 70 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 10 Amperes, comprised of 7 wires, each 22 L.S.G. diameter, .0042 square inches total sectional area  
 Branch cables carrying 4 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .0032 square inches total sectional area  
 Leads to lamps carrying 1 1/2 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 5 Amperes, comprised of 70 wires, each 36 L.S.G. diameter, .0032 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Solid drawn screened galvanized conduit & 600 sq V I R lead  
& compounded cable & cable type sheathed cable

Joints in cables, how made, insulated, and protected only mechanical joints

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 as above



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *nearly so*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *as above*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *cat type sheathing & conduit*

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

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

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

How are cables carried through decks *as above*

Are any cables run through coal bunkers *yes* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *grummetted joints in conduit*

If so, how are they protected *as above*

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 a voltmeter and* an amperemeter, fixed *in engine room*

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 *600* 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.

*L. H. Johnson*

Electrical Engineers

Date *March 16<sup>th</sup> 1914*

COMPASSES.

Distance between dynamo or electric motors and standard compass *35 feet approx -*

Distance between dynamo or electric motors and steering compass *ditto.*

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|---------|----------------------------|----------------------------|
| A cable carrying | Amperes | feet from standard compass | 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.

FOR COCHRANE & SONS LTD.

*J. H. Cochrane*

Builder's Signature.

Date *March 19<sup>th</sup> 1914*

GENERAL REMARKS. *This installation of electric light has been well fitted. The materials & workmanship are good - It has been tried under full working condition & found satisfactory.*

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

*J. H. Cochrane*

*23/3/14*

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute.

*THU. APR. 9-1914*



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