

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1659

Port of *Belfast* Date of First Survey *18 Dec* Date of Last Survey *10th Feb* No. of Visits *5*
 No. in Reg. Book on the *Iron or Steel* *S.S. ALTO* Port belonging to *Newcastle on Tyne*
 Built at *Londonderry* By whom *North of Ireland S. Co. Ltd* 1916
 Owners *Pelton Steamship Co. Limited* Owners' Address *Millburn House, Newcastle on Tyne*
 Yard No. *64* Electric Light Installation fitted by *Campbell & Isherwood* When fitted *1916*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Campbell & Isherwood. 4 pole compound wound. Reby Engine

Capacity of Dynamo *91* Amperes at *110* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *Starboard side, Engine Room* Whether single or double wire system is used *Double*

Position of Main Switch Board *aft. Bulkhead Engine Room* Dividing switches to groups *4* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Chestroom & Engine Room 5 & 2*
Switch in a convenient position for 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 *75* 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 *66 of 16, 30 of 32* arranged in the following groups:—

A *Engine room* lights each of *30 of 16, 13 of 32* candle power requiring a total current of *80.8* Amperes

B *Masthead* lights each of *20 of 16, 17 of 32* candle power requiring a total current of *29.4* Amperes

C *Engine room* lights each of *16 of 16* candle power requiring a total current of *8.8* Amperes

D lights each of candle power requiring a total current of *15.0* Amperes

E lights each of candle power requiring a total current of Amperes

2 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 *included in B.* Amperes

4 Cargo lights of *6 of 16, 32* candle power, whether incandescent or arc lights *incandescent*

If arc lights, what protection is provided against fire, sparks, &c. *none fitted*

Where are the switches controlling the masthead and side lights placed *Chestroom*

DESCRIPTION OF CABLES.

Main cable carrying *81.3* Amperes, comprised of *19* wires, each *15* L.S.G. diameter, *.045* square inches total sectional area

Branch cables carrying *30.8* Amperes, comprised of *4* wires, each *18* L.S.G. diameter, *.0125* square inches total sectional area

Branch cables carrying *29.4* Amperes, comprised of *4* wires, each *18* L.S.G. diameter, *.0125* square inches total sectional area

Leads to lamps carrying *3.3* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0018* square inches total sectional area

Cargo light cables carrying *2.2* Amperes, comprised of *110* wires, each *38* L.S.G. diameter, square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

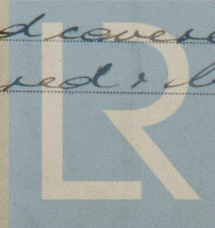
Accommodation lead covered, Holds, U. S. B. in section Yuffe
Engine room Armoured & Braided. All rubber insulation Rubber
& Tapes.

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 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

How are the cables led through the ship, and how protected *Accommodation lead covered, Holds, U. S. B. in section Yuffe, Engine room, Armoured & Braided*



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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 *see galvanisation pipe*

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

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

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

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

How are cables carried through decks *deck pipes, flanged & Deck*

Are any cables run through coal bunkers *no* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *see galvanisation pipe*

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 socket in East End case*

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 *also* supplied with a voltmeter and *with* an amperemeter, fixed *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 & LIVERWOOD LTD.

For *John Meade* Electrical Engineers

Date *19th April 1916*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 100 ft.*

Distance between dynamo or electric motors and steering compass *about 100 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *55* Amperes *1* feet from standard compass *1* feet from steering compass

A cable carrying *1.1* Amperes *6* feet from standard compass *6* feet from steering compass

A cable carrying *28.6* Amperes *20* feet from standard compass *15* 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 *Nile* degrees on *all* course in the case of the

standard compass and *Nile* degrees on *all* course in the case of the steering compass.

THE NORTH OF IRELAND SHIPBUILDING Co. Ltd.

AG. Fletcher Secretary.

Builder's Signature. Date *April 25th 1915*

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules, and is of good description.

It is submitted that this vessel is eligible for

THE RECORD. Elec. light.

JWD 2/5/16

R. F. Beveridge

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.