

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5415

Port of *Belfast* Date of First Survey *Jan 22nd* Date of Last Survey *Jan 14th* No. of Visits *8*
 No. in Reg. Book *on the T.S.S. Niagara* Port belonging to *London*
 Built at *Belfast* By whom *Worthman Clark & Co. Ltd.* When built *1902*
 Owners *Essex Line Ltd.* Owners' Address *London*
 Yard No. *1813* Electric Light Installation fitted by *Robert Wilson & Co. Belfast* When fitted *1902*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single Cylinder Engine mounted to two pole dynamo
 Capacity of Dynamo *97* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Engine Room Rear*
 Position of Main Switch Board *Eng Room blkd.* having switches to groups *A B C D* of lights, &c., as below
distribution
 Positions of auxiliary switch boards and numbers of switches on each *one four way board alongside dynamo*
one four way stokehold door. one four way at tunnel rear. all having switch for each way
one eight way in Saloon pantry one four way Eng Room for cap. cluster one four way in fore
all lights having its own switch
 If cut outs are fitted on main switch board to the cables of main circuit *5 DP* 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 *17%* 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 *159* arranged in the following groups:—
 A *49* lights each of *16* candle power requiring a total current of *27* Amperes
 B *48* lights each of *16* candle power requiring a total current of *27* Amperes
 C *12* lights each of *16* candle power requiring a total current of *7* Amperes
 D *50* lights each of *16* candle power requiring a total current of *28* Amperes
 E 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 } *included* Amperes
 2 Side light with 1 lamps each of 32 candle power requiring a total current of } *in a* Amperes
 3 Cargo lights of 10 16 candle power, whether incandescent or arc lights *Incand.*
 If arc lights, what protection is provided against fire, sparks, &c. *✓*

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

DESCRIPTION OF CABLES.

Main cable carrying *89* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *.119* square inches total sectional area
 Branch cables carrying *27* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area
 Branch cables carrying *27* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area
 Leads to lamps carrying *7* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.012* square inches total sectional area
 Cargo light cables carrying *28* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.035* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

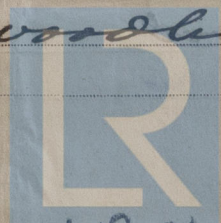
Pure rubber. vulcan rubber & taped vulcanized together and braided

Joints in cables, how made, insulated, and protected *no joints all extension boxes*

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 & wood lined*



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible ☒

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

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat wood casing & 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 "

How are cables carried through beams Armoured through bulkheads, &c. ☒

How are cables carried through decks W & I Tubes

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 armoured

Are any lamps fitted in ~~coal bunkers~~ or spaces which may at times be used for cargo, coals, or baggage yes

If so, how are the lamp fittings and cable terminals specially protected Cast iron covers

Where are the main switches and cut outs for these lights fitted Engine Room

If in the spaces, how are they specially protected "

Are any switches or cut outs fitted in bunkers no

Cargo light cables, whether portable or permanently fixed portable How fixed cast iron boxes

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 "

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 installation is " supplied with a voltmeter and " ammeter, fixed Main Switch Board

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 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.

Robert Wilson

Electrical Engineers

Date

Mar 24th 02

COMPASSES.

Distance between dynamo or electric motors and standard compass 180 ft. about

Distance between dynamo or electric motors and steering compass 145 -

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 2 Amperes 7 feet from standard compass 5 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 Nil degrees on " course in the case of the standard compass and Nil degrees on " course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED,

W. Frichau

Builder's Signature.

Date

16 April 1902

GENERAL REMARKS.

The installation appears to be of good description and has been fitted in accordance with the Rules.

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

Committee's Minute

It is submitted that this installation appears to meet the Rule requirements



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 11.