

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. **7907**

Port of *Belfast* Date of First Survey *Dec 3* Date of Last Survey *Jan 23<sup>rd</sup>* No. of Visits *8*  
 No. in Reg. Book *on the Iron or Steel* *S.S. War Tylhou* Port belonging to *London*  
 Built at *Belfast* By whom *Harland & Wolff L<sup>d</sup>* When built *1918*  
 Owners *The Shipping Controller* Owners' Address  
 Yard No. *534* Electric Light Installation fitted by *Harland & Wolff L<sup>d</sup>* When fitted *1918*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One Enclosed, Forced Lubrication Single Cylinder Engine & Dynamo with Cylinder 5 1/2" x 5" Stroke Speed 520 R.P.M.*

Capacity of Dynamo *100* Amperes at *100* 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 *in Engine Room.* having switches to groups *A.B.C.D.E.* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *One in Chart Room containing 7 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 *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 *100* 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 *151* arranged in the following groups :-

A *Aft Accom.* *31* lights each of *16* candle power requiring a total current of *15* Amperes

B *Bridge* " *47* lights each of *32* candle power requiring a total current of *14.1* Amperes

C *Navigation* *4* lights each of *32 C.P.* 3 lts of *8* candle power requiring a total current of *5.7* Amperes

D *Cargo etc.* *32* lights each of *16 C.P.* 2 lts of *32* candle power requiring a total current of *18.4* Amperes

E *Engines* *32* lights each of *16 C.P.* candle power requiring a total current of *16* Amperes

*1* Mast head light with *1* lamp each of *32* candle power requiring a total current of *1.2* Amperes

*2* Side lights with *1* lamp each of *32* candle power requiring a total current of *1.2* Amperes

*5* Cargo lights of *96* candle power, whether incandescent or arc lights *incandescent*

If arc lights, what protection is provided against fire, sparks, &c. *100*

Where are the switches controlling the masthead and side lights placed *In Chart Room.*

## DESCRIPTION OF CABLES.

Main cable carrying *18.4* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *.022* square inches total sectional area

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

Branch cables carrying *4.2* Amperes, comprised of *1* wires, each *14* L.S.G. diameter, *.00503* square inches total sectional area

Leads to lamps carrying *1.8* Amperes, comprised of *1* wires, each *17* L.S.G. diameter, *.00246* square inches total sectional area

Cargo light cables carrying *3* Amperes, comprised of *108* wires, each *38* L.S.G. diameter, *.00503* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Cables & branch wiring exposed are 600 megohm, C.M.A. grade vulcanized india rubber, armoured & white braided. also 1/17 A.P. 254 lead covered cable.*

Joints in cables, how made, insulated, and protected *Joints made in W.V. junction boxes on decks & porcelain junction boxes with iron protecting covers in Engine Room.*

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 *yes.*

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 *Cables clipped direct to Bulkhead & protected by Armouring & Braiding in Eng. Rm. Galley, Crew's Quarters & lead covered in accommodation*



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 *in piping*

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

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 *Beams bushed with lead or fibre through bulkheads, &c. In glands if W.V. otherwise*

How are cables carried through decks *In iron deck pipes bushed or with gland. fibre or lead.*

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 & braided cables protected by steel plating*

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 *No.*

Cargo light cables, whether portable or permanently fixed *Permanently.* How fixed *Armoured & braided cable clipped to bulkheads.*

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 *on bulk 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 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.

For HARLAND & WOLFF, LTD.

Electrical Engineers

Date *31st July 1918*

COMPASSES.

Distance between dynamo or electric motors and standard compass *110 ft. from Dynamo 22' from Wireless Rotary Comm.*

Distance between dynamo or electric motors and steering compass *102 " " 16' " "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>5.7</i>	<i>11</i>	<i>5</i>	<i>5</i>
<i>14.1</i>	<i>16</i>	<i>10</i>	<i>10</i>
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 *yes*

The maximum deviation due to electric currents, etc., was found to be *2 1/2* degrees on *all* course in the case of the standard compass and *2 1/2* degrees on *all* course in the case of the steering compass.

For HARLAND & WOLFF, LTD.

Builder's Signature.

Date *31st July 1918*

GENERAL REMARKS.

*This installation is of good description, and has been fitted in accordance with the Rules. It is submitted that this vessel is eligible for THE RECORD Elec. light.*

*R. L. Beveridge*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.