

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7977

Port of *Belfast* Date of First Survey *3 June 1918* Date of Last Survey *14 June 1918* No. of Visits *5*  
 No. in Reg. Book on the *Iron or Steel* *P.S. War Labard* Port belonging to *London*  
 Built at *Belfast* By whom *Harland & Wolff L<sup>td</sup>* When built *1918*  
 Owners *The Shipping Controller* Owners' Address  
 Yard No. *537* Electric Light Installation fitted by *Harland & Wolff L<sup>td</sup>* When fitted *1918*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One Open Type Inverted Single Cylinder Forced Lubrication "Ounderland" 7"x5" Stroke Engine direct coupled to a 10 KW. Multipolar Compound wound dynamo running at 360 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 *in Chart Room having 6 Switches*

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits *Yes*

Are the fuses of non-oxidizable metal *Yes* and constructed to fuse at an excess of *100* per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases *Yes*

Total number of lights provided for *120* arranged in the following groups:—

A *Aft Accommodation* *21* lights each of *16* candle power requiring a total current of *10.5* Amperes

B *Midship* *42* lights each of *16* candle power requiring a total current of *16.0* Amperes

C *Navigation etc* *4* lights each of *2½ - 5 or 32* & *5 of 8* candle power requiring a total current of *6.0* Amperes

D *Cargo* *24* lights each of *16* candle power requiring a total current of *12.0* Amperes

E *Engine Room etc* *24* lights each of *16* candle power requiring a total current of *12.0* Amperes

1 *Mast head light with 1 lamp each of 2½ or 32* candle power requiring a total current of *1.2* Amperes

2 *Side lights with 1 lamp each of 5-8 or 32* candle power requiring a total current of *2.4* Amperes

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

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

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

## DESCRIPTION OF CABLES.

Main cable carrying *100* Amperes, comprised of *19* wires, each *14* S.W.G. diameter, *0.094* square inches total sectional area

Branch cables carrying *30* Amperes, comprised of *7* wires, each *16* S.W.G. diameter, *0.022* square inches total sectional area

Branch cables carrying *12* Amperes, comprised of *7* wires, each *20* S.W.G. diameter, *0.070* square inches total sectional area

Leads to lamps carrying *1.8* Amperes, comprised of *1* wires, each *17* S.W.G. diameter, *0.0246* square inches total sectional area

Cargo light cables carrying *3* Amperes, comprised of *108* wires, each *38* S.W.G. diameter, *0.0503* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

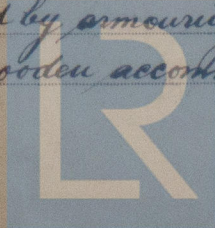
*Cables & Branch Wiring exposed are of 600 Megohm C.M.A. grade Vulcanised india rubber armoured & white braided, Branch Wiring also 1/4" & 3/4" lead covered cable.*

Joints in cables, how made, insulated, and protected *Joints made in W.T. Junction Boxes on Deck and porcelain Junction Boxes with iron protecting cover in Engine Room.*

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances *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 *No*

How are the cables led through the ship, and how protected *Clipped direct to Bulkhead & protected by armouring & braiding in Engine Room, Galley, & Crew's Quarters; and by lead covering in wooden 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

cables are armoured + braided

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

cables are armoured + braided

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

cables are armoured + braided

How are cables carried through beams

Beams bushed with lead or Fibre

through bulkheads, &c. with lead or Fibre Bushes In Hands if W.F. otherwise

How are cables carried through decks

In Iron or Brass Deck Pipes bushed or with Hands

Are any cables run through coal bunkers

no

or cargo spaces

no

or spaces which may be used for carrying cargo, stores, or baggage

no

If so, how are they protected

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 fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers

no

Cargo light cables, whether portable or permanently fixed

Permanently

How fixed Armoured + braided clipped to Bulkhead

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

Is the installation supplied with a voltmeter

and with an amperemeter

on Switchboard, fixed in Engine Room

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, fuses, 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 not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

Electrical Engineers

Date 13/6/18

COMPASSES.

Distance between dynamo or electric motors and standard compass 80 feet from Dynamo + 60 feet from Wireless Rotary Converter

Distance between dynamo or electric motors and steering compass 85 " " " " " " " " " "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
6	7	12	

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

all

courses in the case of the

standard compass and

nil

degrees on

all

courses in the case of the steering compass.

FOR HARTNAD & WOLFF Ltd.

Builder's Signature.

Date 13/6/18

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.

HERD 19/6/18

R. F. Bennett

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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