



REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8087.

Port of Belfast Date of First Survey Decr 23 Date of Last Survey March 7 No. of Visits 12
 No. in Reg. Book on the Iron or Steel T.S.S. Bardic ex Warr Broom Belfast Port belonging to
 Built at Belfast By whom Harland & Wolff L² When built 1919
 Owners The Oceanic Steam Nav. Coys Owners' Address Liverpool
 Yard No. 542 Electric Light Installation fitted by Harland & Wolff L² When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two enclosed forced lubrication, single cylinder engines & dynamos 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, F of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each ~~~~~

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 241 arranged in the following groups :-
 A Engineers & P.O.'s 31 lights each of 16 candle power requiring a total current of 9.3 Amperes
 B Wing Saloon Deck 5 lights each of 32 C.P. 47 lbs of 16 candle power requiring a total current of 21.8 Amperes
 C Engine Rm 62 lights each of 16 C.P. candle power requiring a total current of 29 Amperes
 D Cargo 54 lights each of 16 candle power requiring a total current of 27 Amperes
 E Lower 37 lights each of 16 candle power requiring a total current of 11.1 Amperes
 F Wireless
 2 Mast head light with 1 lamp each of candle power requiring a total current of 2.4 Amperes
 2 Side light with 1 lamp each of candle power requiring a total current of 2.4 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. ~~~~~

Where are the switches controlling the masthead and side lights placed On Bridge

DESCRIPTION OF CABLES.

Main cable carrying 21.8 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Branch cables carrying 2.5 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .00701 square inches total sectional area
 Branch cables carrying Amperes, comprised of wires, each S.W.G. diameter, square inches total sectional area
 Leads to lamps carrying 1.8 Amperes, comprised of 1 wires, each 17 S.W.G. diameter, .00246 square inches total sectional area
 Cargo light cables carrying 3.0 Amperes, comprised of 90 wires, each 36 S.W.G. diameter, .00407 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

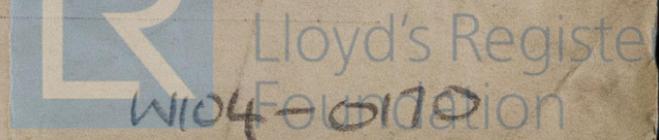
Cables and branch wiring exposed are 600 megohm C.M.A grade vulcanised india rubber armoured and white braided also 1/17 A.P. 254 lead covered cable

Joints in cables, how made, insulated, and protected Joints made in W.T. junction boxes on decks 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 Cables clipped direct to bulkhead & protected by armouring & braiding in Eng. Rm. galley & crews quarters & lead covered in accom



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 cables

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

How are cables carried through beams Beams bushed with Lead or Fibre through bulkheads, &c. In glands if W.T. otherwise

How are cables carried through decks In iron deck pipes, bushed or with gland. ^{Lead or fibre}

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected Lead covered wire in galvanised iron tube

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 Yes, and with an amperemeter Yes, fixed on sub in long run

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 17/3/19

COMPASSES.

Distance between dynamo or electric motors and standard compass 146 ft from Dynamo 132 ft from Wireless Rotary

Distance between dynamo or electric motors and steering compass 140 " " " 136 " " "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>6.0</u>	Amperes	<u>8</u>	feet from standard compass	<u>5</u>	feet from steering compass
A cable carrying	<u>4.0</u>	Amperes	<u>20</u>	feet from standard compass	<u>13</u>	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 yes.

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

FOR HARLAND & WOLFF Ltd.

Builder's Signature.

Date

17/3/19

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.

AWD
21/3/19

R. J. Bennett
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

15.116—Transfer.



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