

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5420

Port of Belfast Date of First Survey Jan 10 1902 Date of Last Survey Feb 24 1902 No. of Visits 7
 No. in Reg. Book on the Steel Marwick Ship belonging to Liverpool
 Built at Belfast By whom Harland & Wolff L When built 1902
 Owners The Railway & S. Coy. L Owners' Address Liverpool
 Yard No. 344 Electric Light Installation fitted by N. H. Allen & Co. L When fitted 1902

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two bipolar undertype dynamo coupled direct to two double acting Compound engines having vertical cylinders 8" dia by 8" stroke
 Capacity of Dynamos each 210 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In thrust room

Position of Main Switch Board " " having switches to groups A, B, C, D, E, F, G, H, I, J of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 for saloon fans 12 switches near pantry, 1 for smoke room fans 6 switches, smoke room entrance, 1 for library for fans, 4 switches, library entrance, 1 for saloon 10 switches saloon entrance, 1 for stateroom, 6 switches, stateroom entrance, 1 for drawing room, 6 switches, drawing room entrance.

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 where double wired

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 411 arranged in the following groups:—

A (1) 10	lights each of	16	candle power requiring a total current of	12	Amperes
B (1) 20	lights each of	16	" " " " " "	30	Amperes
C (1) 20	lights each of	16	" " " " " "	23	Amperes
D (1) 55	lights each of	16	" " " " " "	18	Amperes
E (1) 55	lights each of	16	" " " " " "	33	Amperes
F (1) 92	lights each of	16	" " " " " "	55	Amperes
G (1) 25	lights each of	16	" " " " " "	15	Amperes
H (1) Propeller				40	Amperes
I (1) Fans (33 in. diameter)				20	Amperes
J (1) 2 Mast head light with 1 lamps each of		32	candle power requiring a total current of	34	Amperes
2 Side light with 1 lamps each of		32	candle power requiring a total current of	2.4	Amperes
7 Cargo lights of 6 - 16 cp = 96			candle power, whether incandescent or arc lights.		incandescent

If arc lights, what protection is provided against fire, sparks, &c. 2 arc lamps enclosed by hexagonal glass lanterns the panes protected by wire nets.

Where are the switches controlling the masthead and side lights placed in wheelhouse on bridge

DESCRIPTION OF CABLES.

Main cable carrying 210 Amperes, comprised of 37 wires, each 13 L.S.G. diameter, .250 square inches total sectional area
 Branch cables carrying 55 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .062 square inches total sectional area
 Branch cables carrying 23 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .023 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 145 wires, each 38 L.S.G. diameter, .0042 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables insulated with two layers of pure rubber, layer of vulcanising rubber, tape, and the whole covered with a braiding of jute impregnated with preservative compound lead sheathed shield & grounded in machinery
 Joints in cables, how made, insulated, and protected Spliced joints, soldered, using resin as flux, insulated with two layers rubber strips, then 0.3 knots tape & finally varnished

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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, none in bunkers

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 through the beams, these being bushed with fibre ferrules, the wires being protected by strong wood casing.



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 stung wood casing, lead sheathed for open deck lights, lead, sewed, & immersed where necessary

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead

What special protection has been provided for the cables near boiler casings lead sheathed sewed & immersed

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

How are cables carried through beams in fibre funnels through bulkheads, &c. have watertight glands

How are cables carried through decks in galvanized iron deck tubes lashed with fibre

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

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 _____

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 _____

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel has socket in dynamo piece

How are the returns from the lamps connected to the hull 3/8" brass screw hidden to wire, or through die boxes in hull

Are all the joints with the hull in accessible positions yes

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 2 Voltmeters and two amperemeters fixed on watchstand

The copper used is guaranteed to have a conductivity of 1000 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.

For W. H. ASBURY & CO. LTD.

Electrical Engineers

Date 26. 4. 1902

J. Johnston

COMPASSES.

Distance between dynamo or electric motors and standard compass 130 feet.

Distance between dynamo or electric motors and steering compass 130 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>50</u>	Amperes	<u>8</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>23</u>	Amperes	<u>8</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>23</u>	Amperes	<u>20</u>	feet from standard compass	<u>12</u>	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.

In Harbour on way to

Builder's Signature.

Date 29th April 1902

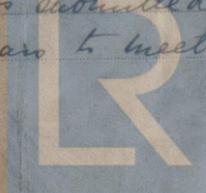
GENERAL REMARKS.

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

R. J. Dennis
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.



Lloyd's Register Foundation

9.5.02

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 11.