

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 55-16

Port of Belfast Date of first Survey Sept 5th Date of Last Survey Nov 11th No. of Visits 17
 No. in Reg. Book on the T.S.S. Java Port belonging to Liverpool
 Owners Mutual Steamship Coy L^d By whom Harland & Wolff L^d When built 1902
 Yard No. 349 Electric Light Installation fitted by W. H. Allen, Liverpool When fitted 1902

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two single cylinder engines each with cylinders 9" dia x 7" stroke direct coupled to two bipolar dynamos

Capacity of Dynamos 90 Amperes at 100 Volts, whether continuous or alternating current continuous

Where & Dynamos fixed between thrust blocks in engine room

Position of Main Switch Board in main bulkhead 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 at entrance to engine room having 12 switches controlling lights in engine deck

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 when 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 275 arranged in the following groups:—

A	Office & Stairs	lights each of	16	candle power requiring a total current of	14	Amperes
B	Accommodation	lights each of	16	candle power requiring a total current of	14	Amperes
C	Cargo	lights each of	16	candle power requiring a total current of	14	Amperes
D	Engine Deck	lights each of	16	candle power requiring a total current of	21.6	Amperes
E	Machinery space	lights each of	16	candle power requiring a total current of	30	Amperes
2	Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
2	Side light with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
10	Cargo lights of	8 x 16 =	128	candle power, whether incandescent or arc lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c. No arcs provided.

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

DESCRIPTION OF CABLES.

Main cable carrying 90 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .0974 square inches total sectional area

Branch cables carrying 48 Amperes, comprised of 19 wires, each 17 L.S.G. diameter, .0448 square inches total sectional area

Branch cables carrying 24 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .0229 square inches total sectional area

Leads to lamps carrying 3 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .0032 square inches total sectional area

Cargo light cables carrying 4.8 Amperes, comprised of 145 wires, each 38 L.S.G. diameter, .004 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables covered with layers of pure rubber, vulcanized rubber & rubber coated tape, the whole vulcanized together & covered with a braiding of hemp soaked in preservative compound. Joints in cables, how made, insulated, and protected Soldered, shield joints insulated with wrappings of pure rubber tape, & black tape, this being 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 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 in strong wood casing run in the fore & aft channel run on Starboard side, engine deck

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 *Strong wood*

Casing as protection.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *none near undue heat*

What special protection has been provided for the cables near boiler casings *Lead sheathed & covered & armoured*

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

How are cables carried through beams *through fibre bushes through bulkheads, &c. through fibre bushes*

How are cables carried through decks *in saloon & on deck pipes 15" long, bushes with fibre*

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 *strong wood casing*

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 *strong Cast iron covers*

Where are the main switches and cut outs for these lights fitted *in Starboard alleyway, near engine room*

If in the spaces, how are they specially protected *u*

Are any switches or cut outs fitted in bunkers *u*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *u*

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

How are the returns from the lamps connected to the hull *soldered to 25/64" lead screw*

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 *u*

Are any switches, cut outs, or joints of cables fitted in the pump room or companion *u*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *u*

The installation is *u* supplied with a voltmeter *and* *an ammeter, fixed* *Main Switch Board.*

The copper used is guaranteed to have a conductivity of *600* 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. ALLEN, SON & CO. LTD.

C. P. Hunter

Electrical Engineers

Date

20.11.02
29.10.02

COMPASSES.

Distance between dynamo or electric motors and standard compass *About 160 feet*

Distance between dynamo or electric motors and steering compass *about 160 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>12</i>	<i>21</i>	<i>20</i>	<i>20</i>
<i>4</i>	<i>28</i>	<i>22</i>	<i>22</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>

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 *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

Karlau & Wolff

Builder's Signature.

Date

24. November 1902

GENERAL REMARKS.

This installation has been fitted in a satisfactory manner, and is of good workmanship and material throughout.

R. J. Percival

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

Committee's Minute

It is submitted that this installation appears to be satisfactory.

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.