

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5173

Port of *Belfast* Date of First Survey *25th July* Date of Last Survey *5th Sep* No. of Visits *4*
 No. in *on the Iron & Steel* *S. S. Devonian* Part belonging to *Liverpool*
 Reg. Book *Belfast* By whom *Harland & Wolff L^{td}* When built *1900*
 Owners *F. Leyland & Coy L^{td}* Owners' Address *Liverpool*
 Yard No. *131* Electric Light Installation fitted by *W. L. Allen & Coy. Bedford* When fitted *1900*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 9' x 7' Vertical Engine driven coupled to 2 undershaft bi-polar dynamo having an output of 175 amp 62 Volt at 275 Rev. min.
 Capacity of Dynamo *175* Amperes at *62* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Port side of starting platform in Main Engine Room*

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

Positions of auxiliary switch boards and numbers of switches on each *1 W.T. 8 way box in Engine Room*

Controlling Engine Room & situated on middle platform aft Bulkhead.
1 W.T. 4 way do. at Entrance to Staircase controlling staircase light

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 *—*

Are the cut outs of non-oxidizable metal *yes* and constructed to fuse at an excess of *50* 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 *340* arranged in the following groups:—

A	H	<i>37</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>37</i>	Amperes
B	C	<i>48</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>48</i>	Amperes
C	D	<i>38</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40</i>	Amperes
D	E	<i>40</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>42</i>	Amperes
E	F	<i>42</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40</i>	Amperes
F	G	<i>64</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40</i>	Amperes
G	H	<i>40</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>40</i>	Amperes
1	Mast head light with	<i>1</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i>	Amperes
2	Side light with	<i>1</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>4</i>	Amperes
8	Cargo lights of	<i>128</i>			candle power, whether incandescent or arc lights	<i>incandescent</i>	

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

Where are the switches controlling the masthead and side lights placed

Whellhouse on Bridge

DESCRIPTION OF CABLES.

Main cable carrying *175* Amperes, comprised of *27* wires, each *14* L.S.G. diameter, *.1897* square inches total sectional area
 Branch cables carrying *60* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.0624* square inches total sectional area
 Branch cables carrying *30* Amperes, comprised of *19* wires, each *18* L.S.G. diameter, *.0358* square inches total sectional area
 Leads to lamps carrying *1* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0018* square inches total sectional area
 Cargo light cables carrying *8* Amperes, comprised of *7* wires, each *20* L.S.G. diameter, *.0073* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductor cov^d with India Rubber, & with pure Rose Rubber & then 2 coats of Gutta-percha Rubber & finally with an India Rubber Coated Tape & the whole encased together. The whole is then externally braided.
 Joints in cables, how made, insulated, and protected *All joints made by soldering with resin flux & insulated with pure rubber, felt tape & Gokurite tape & final coating of Shellac varnish*

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 bunks, 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 *Let in stout wood groove casing through ducts & protected by felt funnel through iron bulkhead & stanchion*



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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 *Lead casing*

wire & heat casing.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Heat casing.*

What special protection has been provided for the cables near boiler casings *Lead cas. & am. wire.*

What special protection has been provided for the cables in engine room *Lead cas. & am. wire.*

How are cables carried through beams

holes barked with fibre through bulkheads, &c.

do. & HT. glass.

How are cables carried through decks

J.I. deck & bulk barked with fibre & Manding 9" above decks.

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

Cables in cable space protected with heavy wire casings

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

portable

How fixed

Conducing metal & union

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

Earth plate to fixed limit.

How are the returns from the lamps connected to the hull

3/4" strand Wt. Earth wire, brass & soldered.

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 *2*

ampere meters fixed *on main*

switch board.

The copper used is guaranteed to have a conductivity of *100*

per cent. that of pure copper.

(Matheson & Shand)

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.

Electrical Engineers

Date *Sept. 11/00*

J. Johnston

COMPASSES.

Distance between dynamo or electric motors and standard compass

all. 109' feet.

Distance between dynamo or electric motors and steering compass

all. 103' feet.

The nearest cables to the compasses are as follows:—

A cable carrying	<i>10</i>	Ampères	<i>6</i>	feet from standard compass	<i>10</i>	feet from steering compass
A cable carrying	<i>1</i>	Ampères	<i>2</i>	feet from standard compass	<i>7</i>	feet from steering compass
A cable carrying		Ampères		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 course in the case of the

standard compass and

nil

degrees on

all

course in the case of the steering compass.

Builder's Signature.

Date *13th Sept. 1900.*

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules, and is of good description throughout

R. J. M. Everett

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

Committee's Minute

It is submitted that this installation appears to meet the requirements of the Rules.

20.9.00

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN

REPORT FORM No. 11.

BE670-0152