

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6670

Port of Belfast Date of First Survey June 24 Date of Last Survey Sept 11 No. of Visits 6
 No. in on the Iron or Steel T.B. Lister & Co. Reg. Book 1909 By whom Hauland & Wolff When built 1909
 Owners Bobby S. Lister Owners' Address Liverpool Electric Light Installation fitted by Hauland & Wolff When fitted 1909

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Enclosed Forced Lubrication Engines & Dynamos, by cylinder 7" & 12" x 5" Stroke, giving an output of 42 K.W. at 100 volts, when running at a speed of 525 R.P.M.

Capacity of Dynamo 420 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room. Whether single or double wire system is used Single.

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

2 Boxes in Passage Middle House Bridge Deck, one containing 10 switches and the other containing 6 switches, 1 Box containing 12 switches in Port Passage Upper Deck, 2 Boxes each containing 12 switches in Starboard Passage Upper Deck, and 1 Box containing 10 switches in Entrance to Stores Upper Deck.

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 150 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

F. Engineers & Personnel 32 lights each of 16 candle power requiring a total current of 19.2 amperes.
 G. Daylight 104 lights each of 16 candle power requiring a total current of 62.4 amperes.
 H. Cargo. 24 lights each of 16 candle power requiring a total current of 14.4 amperes.
 I. Officers, Engineers & Crew. 94 lights each of 16 candle power requiring a total current of 56.4 amperes.
 J. Heating & Cabin Fans. requiring a total current of 102.2 amperes.
 K. Sirocco Fans. requiring a total current of 17.5 amperes.

2 Side light with 1 lamps each of 32 candle power requiring a total current of 1.2 Amperes

8 Cargo lights ~~6 of 64 c each~~ & 2-20 amp arc lamps candle power, whether incandescent or arc lights both.

If arc lights, what protection is provided against fire, sparks, &c. Glass globes around arcs protected by wire netting.

Where are the switches controlling the masthead and side lights placed on Navigating Bridge.

DESCRIPTION OF CABLES.

Main cable carrying 87.6 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .09442 square inches total sectional area

Branch cables carrying 20 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .02227 square inches total sectional area

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

Leads to lamps carrying 3.6 Amperes, comprised of 7 wires, each 22 L.S.G. diameter, .004266 square inches total sectional area

Cargo light cables carrying 2.4 Amperes, comprised of 145 wires, each 38 L.S.G. diameter, .004199 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

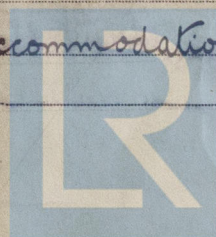
Cables are throughout decks of 2500 megohm class and C.M.A. quality, insulated with pure rubber and vulcanised rubber, braided and compounded over all. Wires in Engine and Boiler Rooms protected by Lead Covering and Steel Armouring and Braided over all. Mains up Engine Room Bulkhead protected where necessary by G.I. Guards.

Joints in cables, how made, insulated, and protected Soldered using resin as a flux and insulated with pure rubber and prepared tape.

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.

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 strong wood casing in Accommodation and in Cargo Holds further protected by G.I. Troughing.



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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6670

Port of Salford Date of First Survey June 24 Date of Last Survey Sept 11 No. of Visits 6
 No. in on the Iron or Steel T.B. Leach belonging to Lucas & Co.
 Reg. Book Salford Built at Salford By whom Paul & Wolff When built 1909
 Owners Robert S. Co. Ltd. Owners' Address Lucas & Co.
 Yard No. 403 Electric Light Installation fitted by Paul & Wolff When fitted 1909

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two enclosed forced lubrication engines & dynamos, by cylinder 7" x 12" x 5" stroke, giving an output of 42 K.W. at 100 volts, when running at a speed of 525 R.P.M.

Capacity of Dynamo 420 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room Whether single or double wire system is used Single

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

Positions of auxiliary switch boards and numbers of switches on each 1. C.B. Box containing 10 switches in Engine Room,
1. C.B. Box containing 6 switches in Boiler Room, 1 Box on Navigating Bridge containing 12 switches,
2 Boxes in Entrance on Bridge Deck Forward, one containing 10 switches and the other containing 6 switches,

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 150 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

lights provided for 666 arranged in the following groups:—

Port, 139 lights each of 16	candle power requiring a total current of 87.6	Amperes
Starboard, 122 lights each of 16	candle power requiring a total current of 78	Amperes
8 Projector lights each of 16	candle power requiring a total current of 40	Amperes
Spaces 82 lights each of 16	candle power requiring a total current of 49.2	Amperes
Galleys { 4 lights each of 32 12 lights each of 16 16 " " " 5	candle power requiring a total current of 18.6	Amperes
Head light with 1 lamps each of 32	candle power requiring a total current of 1.2	Amperes
2 Side light with 1 lamps each of 32	candle power requiring a total current of 1.2	Amperes

8 Cargo lights 6 of 64 cp each & 2 of 20 cp arc lamps candle power, whether incandescent or arc lights both

If arc lights, what protection is provided against fire, sparks, &c. Glass globes around arcs protected by wire netting.

Where are the switches controlling the masthead and side lights placed on Navigating Bridge.

DESCRIPTION OF CABLES.

Main cable carrying 87.6 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .09442 square inches total sectional area
 Branch cables carrying 20 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .02227 square inches total sectional area
 Branch cables carrying — Amperes, comprised of — wires, each — L.S.G. diameter, — square inches total sectional area
 Leads to lamps carrying 3.6 Amperes, comprised of 7 wires, each 22 L.S.G. diameter, .004266 square inches total sectional area
 Cargo light cables carrying 2.4 Amperes, comprised of 145 wires, each 38 L.S.G. diameter, .004199 square inches total sectional area

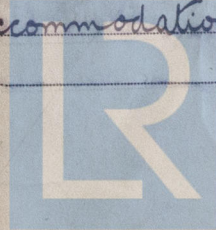
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables are throughout Becks of 2500 megohm class and C.M.A. quality, insulated with pure rubber and vulcanised rubber, braided and compounded over all. Wires in Engine and Boiler Rooms protected by lead covering and steel armouring and braided over all. Mains up Engine Room Bulkhead protected where necessary by G.I. Guards.
 Joints in cables, how made, insulated, and protected Soldered using resin as a flux and insulated with pure rubber and prepared Kape.

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

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 Strong wood casing in accommodation and in cargo holds further protected by G.I. Broughing.



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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 Piping

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, Steel Armoured & Braided over all.

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

What special protection has been provided for the cables in engine room Lead covered, Steel Armoured & Braided over all. Mains up Engine Room Bulkhead protected where necessary by strong G.I. Guards.

How are cables carried through beams beams brushed with fibre through bulkheads, &c. in Glands if W.C. otherwise fibre brushed.

How are cables carried through decks in Iron Deck pipes brushed 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 in strong wood casing protected by G.I. Troughings.

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 Permanently How fixed in casing

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Through Barth plate & terminal screwed to dynamo base plate

How are the returns from the lamps connected to the hull screwed to 3/8 dia. Kinned brass lap screws in beams etc.

Are all the joints with the hull in accessible positions Yes

The installation is supplied with a voltmeter and an amperemeter, fixed on switchboard for each machine.

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 copper used is guaranteed to have a conductivity of 100 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 Harland & Wolff Ltd
Electrical Engineers

Electrical Engineers

Date 25 Sep 1909

COMPASSES.

Distance between dynamo or electric motors and standard compass 128 feet to Dynamo, 43 feet to nearest Motor.

Distance between dynamo or electric motors and steering compass 164 feet to Dynamo, 81 feet to nearest Motor.

The nearest cables to the compasses are as follows:—

A cable carrying 40 Amperes 49 feet from standard compass 4 1/2 feet from steering compass

A cable carrying 18.6 Amperes 43 1/2 feet from standard compass 8 1/2 feet from steering compass

A cable carrying 28.8 Amperes 40 feet from standard compass 32 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 courses in the case of the standard compass and nil degrees on all courses in the case of the steering compass.

For Harland & Wolff Ltd
Builder's Signature.

Builder's Signature.

Date 25 Sep 1909

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

JWD 28/9/09

APR 8

R. F. Bennett

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

Committee's Minute