

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6372.

Port of Belfast Date of First Survey May 2nd Date of Last Survey June 25 No. of Visits 12
 No. in on the Iron SS. Para Port belonging to Rio-de-Janeiro
 Reg. Book Built at Belfast By whom Workman Clark & Co. Ltd. When built 1907
 Owners Lloyd Brasileiro Cia. Ltd. Owners' Address Rio-de-Janeiro
 Yard No. 242 Electric Light Installation fitted by THE SUNDERLAND FORGE & ENG. CO. LTD When fitted 1907

DESCRIPTION OF DYNAMO, ENGINE, ETC. - 3 Sets. Compound wound dynamos by British Thompson Houston Co direct coupled to enclosed engines by Peter Brotherhood

Capacity of Dynamo 164 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed special recess main deck level. S side of E. Room.

Position of Main Switch Board beside dynamo having switches to groups eight of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

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 cessel 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 100% per cent over the normal current

Are all cut outs fitted in easily accessible positions yes Are the fuses of standard dimensions no 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 400 arranged in the following groups:—

A	<u>110</u>	lights each of	<u>16 cp</u>	candle power requiring a total current of	<u>55</u>	Amperes
B	<u>68</u>	lights each of	<u>16 cp</u>	candle power requiring a total current of	<u>34</u>	Amperes
C	<u>40</u>	lights each of	<u>16 cp</u>	candle power requiring a total current of	<u>20</u>	Amperes
D	<u>25</u>	lights each of	<u>16 cp</u>	candle power requiring a total current of	<u>12.5</u>	Amperes
E	<u>12</u>	lights each of	<u>16 cp</u>	candle power requiring a total current of	<u>6</u>	Amperes

2 Mast head light with 1 lamps each of 32 cp D.F. candle power requiring a total current of 1 Amperes

2 Side light with 1 lamps each of 32 cp. D.F. candle power requiring a total current of 1 Amperes

8 Cargo lights of 4 x 16 candle power, whether incandescent or are lights incandescent

If are lights, what protection is provided against fire, sparks, &c. 2 enclosed lamps B.T.H. ones fitted with glazed lanterns as well as inner globes.

Where are the switches controlling the masthead and side lights placed in chartroom.

DESCRIPTION OF CABLES.

Main cable carrying 164 Amperes, comprised of 2 x 19 wires, each 14 L.S.G. diameter, .1912 square inches total sectional area

Branch cables carrying 55 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0612 square inches total sectional area

Branch cables carrying 34 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0344 square inches total sectional area

Leads to lamps carrying 55 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area

Cargo light cables carrying 2 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .00322 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC. Marine Pure rubber, vulc rubber, taped braided lead cond + armoured, wiring in recess. as above but lead cond only.

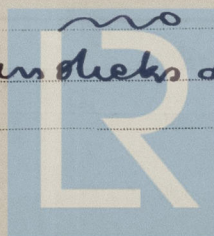
Joints in cables, how made, insulated, and protected

There are none.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux no 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

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 led thro' timber decks & protected by steel armouring.



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F-90 216cp 45 amperes.
3-55 216cp 27.5 "

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 and

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

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

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

How are cables carried through beams holes lined with fibre through bulkheads, &c. special bulk. glands.

How are cables carried through decks water tight duct tubes

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 lead and + armoured

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 Special heavy C.I. fittings

Where are the main switches and cut outs for these lights fitted in strong C.I. Boxes in space

If in the spaces, how are they specially protected C.I. Box

Are any switches or cut outs fitted in bunkers no

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 Earthed by means of a heavy copper bar.

How are the returns from the lamps connected to the hull By means of twisted brass wires + washers

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 yes

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

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

The installation is yes supplied with a voltmeter and yes an amperemeter, fixed on Switchboard

The copper used is guaranteed to have a conductivity of 98% per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 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.

THE SUNDERLAND FORGE & ENG. Co. LTD Electrical Engineers Date 1/10/07

COMPASSES.

Distance between dynamo or electric motors and standard compass about 180 feet

Distance between dynamo or electric motors and steering compass " 170 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
10	6	4	4
.5	led into	10	10
.5	10	led into	led into

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 3 mil degrees on all course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

PRO WORKMAN & CO., LIMITED.

P. P. P.

SECRETARY

Builder's Signature. Date

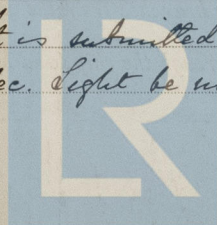
GENERAL REMARKS.

There are also fitted - 3 - 12 1/2" Sirocco fans driven by 3 H.P. motors
1 - 15" do by 4 H.P. Dough mixer 3 H.P. Knife chaser 1/2" H.P. Barbers shop 1/6" H.P.
Lathe motor 1 H.P. also 15" Arch Type Projector. + 55 Cabin fans
in state rooms etc. This installation appears to be of good description, and in accordance with the Rules.

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

Committee's Minute

It is submitted that the Record
Elec. Light be noted in the Reg. Book.



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9.10.07

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.