

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6293

Port of Belfast. Date of First Survey March 5<sup>th</sup> Date of Last Survey March 24<sup>th</sup> No. of Visits 7  
 No. in Reg. Book on the Iron or Steel S/S Orybassa Port belonging to Glasgow.  
 Built at Belfast By whom Messrs Harkman Black & Co. When built 1907  
 Owners British India Steam Navigation Co. Owners' Address London.  
 Yard No. 240 Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd When fitted 1907

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar compound wound dynamo by Sunderland Forge & Eng. Co. Ltd  
direct coupled to open type engine  
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed At bottom of engine room Whether single or double wire system is used Double  
 Position of Main Switch Board Close to dynamo having switches to groups five of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each one beside steering gear, having four  
switches for cargo lights and one in chartroom having switches for side lights  
Masthead lights, compass and telegraph lights  
 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  
 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 155 arranged in the following groups:—  

A	50	lights each of	16	candle power requiring a total current of	30	Amperes
B	18	lights each of	16	candle power requiring a total current of	10.8	Amperes
C	24	lights each of	16	candle power requiring a total current of	14.4	Amperes
D	38	lights each of	16	candle power requiring a total current of	22.8	Amperes
E	25	lights each of	16	candle power requiring a total current of	15	Amperes
Two	Mast head light with	1 lamp each of	32 B.P. D.F.	candle power requiring a total current of	2.4	Amperes
Two	Side light with	1 lamp each of	32 B.P. D.F.	candle power requiring a total current of	2.4	Amperes
Four	Cargo lights of	6 of 16		candle power, whether incandescent or arc lights	Incandescent.	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying 97.8 Amperes, comprised of 19 wires, each 12 L.S.G. diameter, .161 square inches total sectional area  
 Branch cables carrying 27 Amperes, comprised of 4 wires, each 15 L.S.G. diameter, .0285 square inches total sectional area  
 Branch cables carrying 22.8 Amperes, comprised of 4 wires, each 16 L.S.G. diameter, .0245 square inches total sectional area  
 Leads to lamps carrying 1.2 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0081 square inches total sectional area  
 Cargo light cables carrying 3.6 Amperes, comprised of 4 wires, each 2 1/2 L.S.G. diameter, .0050 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure rubber, vulcanized rubber, taped, lead covered and braided in bunks &c.  
In Engine Room &c as above but also armoured and braided overall.

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 — 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 No

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 Lead covered, armoured and braided cables led through beams in Tween decks



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 covered armoured and braided*

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

What special protection has been provided for the cables near boiler casings *lead covered armoured and braided*

What special protection has been provided for the cables in engine room *lead covered armoured and braided*

How are cables carried through beams *holes bushed with fibre* through bulkheads, &c. *Watright glands used*

How are cables carried through decks *Watright deck tubes used*

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 covered armoured and braided*

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

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

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

The installation is *Yes* supplied with a voltmeter and *Yes* an amperemeter, fixed *on Main Switchboard*

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 *99* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *1750* 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 HENDERLAND FORCE & ENGINEERING CO. LTD.**

Electrical Engineers

Date *12 April 1907*

COMPASSES.

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

Distance between dynamo or electric motors and steering compass *about 175 "*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>6</i>	Amperes	<i>3</i>	feet from standard compass	<i>pass into</i>	feet from steering compass
A cable carrying	<i>1.2</i>	Amperes	<i>3</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying		Amperes		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 in the case of the standard compass and *Nil* degrees on *all* course in the case of the steering compass.

Builder's Signature.

Date *15 April 1907*

GENERAL REMARKS.

*This installation appears to be of good description and has been fitted in accordance with the Rules.*

*R. J. Beuville*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.