

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 14240

Port of Glasgow Date of First Survey 29 Feb 1896 Date of Last Survey 29 Feb 1896 No. of Visits 1  
No. in Reg. Book 116 on the Iron Steel Ship Nephrite Port belonging to Glasgow  
Built at Glasgow By whom Scott & Sons When built 1896  
Owners W. Robertson Owners Address 10 Gordon Street Glasgow  
Yard No. 116 Electric Light Installation fitted by J. Aspin, Glasgow When fitted 1896

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound self regulating dynamo, coupled direct to  $5\frac{1}{2} \times 4$  "Rokeby" vertical engine.  
at 450 rev. per min. —

Capacity of Dynamo 50 Amperes at 80 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine room

Position of Main Switch Board Near dynamo having switches to groups (4 circuits) of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each (Auxiliary fuse boards)  
Forecastle, midships, Aft. — (each lamp has a separate switch at the lamp. —)

If cut outs are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch boards 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 yes (single lamps, fitted with S.P. cut outs.)

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 no

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 49 arranged in the following groups:—

A Forecastle	5 lights each of	16	candle power requiring a total current of	4	Amperes
B Hold	6 lights each of	16	candle power requiring a total current of	4.8	Amperes
C Midships	24 lights each of	16	candle power requiring a total current of	19.2	Amperes
D Engine Room	6 lights each of	16	candle power requiring a total current of	4.8	Amperes
E Aft.	5 lights each of	16	candle power requiring a total current of	4	Amperes
one Mast head light with	one lamps each of	25	candle power requiring a total current of	1.2	Amperes
two Side light with	two lamps each of	25	candle power requiring a total current of	2.4	Amperes
two Cargo lights	each 8. cluster of 16		candle power, whether incandescent or are lights included		

If arc lights, what protection is provided against fire, sparks, &c. no arc lights  
(Masthead, in Main Fuse box, with removable key (Forecastle))

Where are the switches controlling the masthead and side lights placed (Side lights, in Chart room)

## DESCRIPTION OF CABLES.

Main cable carrying	41. Amperes, comprised of	two + wires, each	7/16 L.S.G. diameter,	.0462 square inches total sectional area
1 Branch cables carrying	19.2 Amperes, comprised of	one + one wires, each	7/16 L.S.G. diameter,	.0231 square inches total sectional area
3 Branch cables carrying	4.8 Amperes, comprised of	one + one wires, each	7/20 L.S.G. diameter,	.0070 square inches total sectional area
Leads to lamps carrying	.8 Amperes, comprised of	one + one wires, each	1/18 L.S.G. diameter,	.0019 square inches total sectional area
Cargo light cables carrying	6.4 Amperes, comprised of	two concentric,	14/23 L.S.G. diameter,	.0070 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main Cables. Pure, and Vulcanized rubber, taped, and Cased in Continuous drawn lead. —

Branch to single lamps. Pure and Vulcanized rubber, taped braided and coated in preservative compound. —

Joints in cables, how made, insulated, and protected None required. all branches run from Sectional fuse boards.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux None 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

Are there any joints in or branches from the cable leading from dynamo to main switch board None

How are the cables led through the ship, and how protected in 3/4 wood casing. covers 1/2 thick. —  
Led through Engine Room space. & Hold. in Gal bunkers led through iron pipe. —



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yps. except in Hold.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *lead covered*

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

What special protection has been provided for the cables near boiler casings *lead covered, and wood casing, but not near boilers.*

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

How are cables carried through beams *through teakwood plugs* through bulkheads, &c. *through teakwood plugs*

How are cables carried through decks *through 2 ft. gal. iron pipes, with teakwood plugs.*

Are any cables run through coal bunkers *Yps* or cargo spaces *Yps* or spaces which may be used for carrying cargo, stores, or baggage *Yps.*

If so, how are they protected *3 3/4" wood casing. 2 1/2" covers. cables lead covered.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yps in Hold.*

If so, how are the lamp fittings and cable terminals specially protected *Cable fittings with covers. Terminals in lock-tight junction boxes*

Where are the main switches and cut outs for these lights fitted *On the main Switch Board in Engine room.*

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers *None*

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 *Double wire system.*

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

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 *also* supplied with a voltmeter *on main Switch Board* ~~an ammeter~~, fixed *in Engine room.*

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 *700* 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.

*James Espey, 173a St Vincent Street Glasgow* Electrical Engineers Date *2 March 1896*

COMPASSES.

Distance between dynamo or electric motors and standard compass *24'*

Distance between dynamo or electric motors and steering compass *50'*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying <i>19.2</i>	<i>24</i>	<i>10</i> feet	<i>10</i> feet
A cable carrying <i>4.8</i>	<i>24</i>	<i>15</i> feet	<i>15</i> feet
A cable carrying <i>4</i>	<i>24</i>	<i>15</i> feet	<i>15</i> feet

Have the compasses been adjusted with and without the electric installation at work at full power *Yps.*

The maximum deviation due to electric currents, etc., was found to be *0* degrees on *N* course in the case of the standard compass and *not tested* degrees on *not tested* course in the case of the steering compass.

*Scott Sons* Builder's Signature Date *3<sup>rd</sup> Mar. 1896.*

GENERAL REMARKS.

*This installation worked at full output on the occasion of the official trial of machinery and the compasses adjusted. No deviation was observed and so far as could be seen, this installation is satisfactorily fitted*

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

Committee's Minute

*This installation appears to be in accordance with the Rules*

*Lloyd's Register Foundation*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.