

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. *15461*

Port of *Greenock* Date of First Survey *1st July/08* Date of Last Survey *5th Sept/08* No. of Visits *26*
 No. in Reg. Book *134* on the Iron or Steel *Gs. Bannockburn* Port belonging to *Greenock*
 Built at *Port Glasgow* By whom *Russell 1607* When built *1908*
 Owners *R. Shankland & Co.* Owners' Address *Greenock*
 Yard No. *578* Electric Light Installation fitted by *Wm Harvie & Co. Ltd. Glasgow.* When fitted *1908*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound multipolar dynamo, direct coupled to single cylinder vertical open type engine, for 90 lbs steam. 300 revs.
 Capacity of Dynamo *70* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Engine Room floor, Starboard.* Whether single or double wire system is used *double*
 Position of Main Switch Board *in Engine Room near Dynamo* having switches to groups *A. B. C. D. & E.* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *Wheel house - 6 Way D.B., Forward Passage - 3 Way D.B., Midship Passage - 9 Way D.B., Mess Room - 6 Way D.B., Engine Room - 9 Way D.B.*
 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, Tin* and constructed to fuse at an excess of *50 to 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 *Yes*
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes, Porcelain bases*
 Total number of lights provided for *124* arranged in the following groups:—

A Navigation	16	lights each of	<i>7-32 cp 7 12-16</i>	candle power requiring a total current of	<i>9</i>	Amperes
B Forward	15	lights each of	<i>15-</i>	candle power requiring a total current of	<i>8</i>	Amperes
C Saloon	29	lights each of	<i>16</i>	candle power requiring a total current of	<i>16</i>	Amperes
D Midships	36	lights each of	<i>16</i>	candle power requiring a total current of	<i>20</i>	Amperes
E Engines	28	lights each of	<i>16</i>	candle power requiring a total current of	<i>16</i>	Amperes
<i>2</i>	Mast head lights with	<i>2</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i> Amperes
<i>2</i>	Side lights with	<i>2</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>2</i> Amperes
<i>6</i>	Cargo lights of		<i>16</i>	candle power, whether incandescent or arc lights		

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

Where are the switches controlling the masthead and side lights placed *in wheel house on Bridge*

DESCRIPTION OF CABLES.

Main cable carrying	<i>40</i>	Amperes, comprised of	<i>19</i>	wires, each	<i>16</i>	L.S.G. diameter, .060	square inches total sectional area
Branch cables carrying	<i>20</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>16</i>	L.S.G. diameter, .022	square inches total sectional area
Branch cables carrying	<i>12</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>18</i>	L.S.G. diameter, .012	square inches total sectional area
Leads to lamps carrying	<i>3</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>16</i>	L.S.G. diameter, .003	square inches total sectional area
Cargo light cables carrying	<i>3</i>	Amperes, comprised of	<i>114</i>	wires, each	<i>38</i>	L.S.G. diameter,	square inches total sectional area

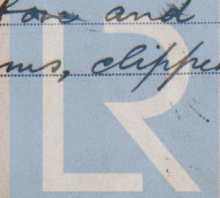
DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of tinned copper insulated with pure and vulcanised rubber and taped. In accommodation, lead covered overall, and in holds engine room etc, taped, armoured with gal. iron wires & braided over lead.
 Joints in cables, how made, insulated, and protected *No joints. Porcelain Extensions used throughout.*

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 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 *None*

How are the cables led through the ship, and how protected *Main cables run on fore and aft girders, clipped to wood grounds; also through beams, clipped to decks.*



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes. All wiring exposed.
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered Armoured and braided & compounded.
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Same as above.
 What special protection has been provided for the cables near boiler casings Wires run in gal. iron tubing.
 What special protection has been provided for the cables in engine room Wires run in gal. iron tubing.
 How are cables carried through beams Lead lashed holes through bulkheads, &c. if watertight, brass packing glands.
 How are cables carried through decks Watertight Lead Deck 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 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 Plug & Socket
 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 _____ supplied with a voltmeter and _____ 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 98 per cent. that of pure copper.
 Insulation of cables is guaranteed to have a resistance of not less than 2,000 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.

J. Wm. Harvie & Co. Ltd. Electrical Engineers Date 5th Sept. 08.
A.G.S.

COMPASSES.

Distance between dynamo or electric motors and standard compass 104 feet.
 Distance between dynamo or electric motors and steering compass 100 "
 The nearest cables to the compasses are as follows:—
 A cable carrying 5 Amperes a fixed light feet from standard compass and _____ feet from steering compass
 A cable carrying 9 Amperes about 20 feet feet from standard compass about 10 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 _____ degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

Russell & Co. Builder's Signature. Date 8th September 1908
for J.M.

GENERAL REMARKS. The materials and workmanship are good when completed the installation was tried and found to work satisfactorily.

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

Committee's Minute GLASGOW 15 SEP. 1908 It is submitted that the Record
Electric Light. C.B.C. Rec. Light be noted in the Reg. Book.