

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 15528

Port of *Hull* Date of First Survey *Aug 25th* Date of Last Survey *Sep 10/03* No. of Visits *3*
 No. in Reg. Book *23 Supp* on the ~~Iron~~ *Steel* *S.S. City of Bradford* belonging to *Grimby*
 Built at *Hull* By whom *Carlisle S. B. & Co. Ltd.* When built *1903*
 Owners *Great Central Railway Co.* Owners' Address *Grimby*
 Yard No. *483* Electric Light Installation fitted by *J. W. Holmes & Co.* When fitted *1903*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 9" x 8" open vertical engine by Clark Chapman & Co. coupled to one compound wound dynamo gramme pattern by J. W. Holmes & Co.

Capacity of Dynamo *180* Amperes at *55* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Stbd. side engine room on middle platform*

Position of Main Switch Board *Near Dynamo* having switches to groups *A to G* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Saloon etc 4 fuseboxes aft. Officers etc 2-6 way boxes*
Emigrants 6 way box. Crew 4 way box. Cargo 3 fuseboxes. Engines 4 way box.
feeding four boxes. Navigation 1-3 way on b'd.

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 *No*

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 *50* 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*

Total number of lights provided for *2-200 cp. 3-32 cp.* arranged in the following groups :-

A	Saloon etc 54 lights each of	16	candle power requiring a total current of	54	Amperes
B	Officers etc 27 lights each of	16	candle power requiring a total current of	27	Amperes
C	Emigrants 14 lights each of	16	candle power requiring a total current of	14	Amperes
F	Engines 26 lights each of	16	candle power requiring a total current of	26	Amperes
D	Crew 9 lights each of	16	candle power requiring a total current of	9	Amperes
E	Navigation 16 lights each of	16	candle power requiring a total current of	16	Amperes
E	Cargo 37 lights each of	16	candle power requiring a total current of	37	Amperes
1	Mast head light with 1 lamp each of	32	candle power requiring a total current of	2	Amperes
2	Side lights with 1 lamp each of	32	candle power requiring a total current of	4	Amperes
2	Cargo lights of	200	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 chart room*

DESCRIPTION OF CABLES.

Main cable carrying *180* Amperes, comprised of *37* wires, each *14* L.S.G. diameter, *.191* square inches total sectional area
 Branch cables carrying *54* Amperes, comprised of *19* wires, each *17* L.S.G. diameter, *.0479* square inches total sectional area
 Branch cables carrying *9* Amperes, comprised of *7* wires, each *19* L.S.G. diameter, *.0085* square inches total sectional area
 Leads to lamps carrying *1* Amperes, comprised of *3* wires, each *22* L.S.G. diameter, *.0018* square inches total sectional area
 Cargo light cables carrying *12 1/2* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.0128* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

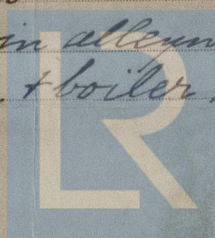
Cables are insulated with pure rubber vulcanised & taped, and further protected by lead covering or iron sheathing where necessary.

Joints in cables, how made, insulated, and protected *Spliced, soldered & insulated, and protected by approved rubber tapes etc.*

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 casing in alleyways etc.*
Lead C wire in cabins etc. Wm^d in Eng. & boiler rooms.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes when cargo is out*

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

What special protection has been provided for the cables near galley, or oil lamps or other sources of heat *Lead covering*

What special protection has been provided for the cables near boiler casings *Armouring*

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

How are cables carried through beams *Insulated bushes* through bulkheads, &c. *Stuffing boxes*

How are cables carried through decks *Beck tubes*

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

If so, how are they protected *Armouring in bunkers, strong casing in cargo.*

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 *C.I. covers*

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

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 *✓*

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 supplied with a voltmeter and an amperemeter, fixed *on Main Table.*

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.

J. H. Holmes. Esq.

Electrical Engineers

Date *14-10-03*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 70 ft.*

Distance between dynamo or electric motors and steering compass *" 65 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1</i>	<i>8</i>	<i>3</i>	<i>3</i>
<i>6</i>	<i>12</i>	<i>6</i>	<i>6</i>
<i>15</i>	<i>20</i>	<i>15</i>	<i>15</i>

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 course in the case of the standard compass and *nil* degrees on course in the case of the steering compass.

SHIPBUILDING & ENGINEERING CO. LIMITED
J. J. Phipps Builder's Signature. Date

GENERAL REMARKS. *This Electric Lighting Installation has been fitted on board in accordance with the Rules, and tested with satisfactory results.*

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

Committee's Minute

It is submitted that this installation appears to be satisfactory.
Lloyd's Register Foundation
17.10.03

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.