

REPORT ON ELECTRIC LIGHTING INSTALLATION. No 23070

Port of *Hull* Date of First Survey *Sep 15* Date of Last Survey *7th Nov.* No. of Visits *17.*
 No. in Reg. Book *726* on the ~~Iron~~ Steel *Sc. Sr. Blackburn* Port belonging to *Grimsby*
 Built at *Hull* By whom *Messrs Earle's & Co* When built *1910*
 Owners *Great Central Raily* Owners' Address *Grimsby*
 Yard No. *568* Electric Light Installation fitted by *Messrs Clarke Chapman & Co* When fitted *1910*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Continuous current compound wound dynamo, coupled direct to a single cyl double acting open type vertical engine.

Capacity of Dynamo *273* Amperes at *55* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *Engine Room* Whether single or double wire system is used *double*

Position of Main Switch Board *near dynamo* having switches to groups *A B C D E F G* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Each light and group of lights, provided with switches as necessary.*

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 *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. Slate & porcelain*

Total number of lights provided for *240 + 2 Cargo lamps* arranged in the following groups:—

A	{ 25 lights each of 16 }	200	candle power requiring a total current of	41.5	Amperes
B	{ 24 lights each of 5 }	16	candle power requiring a total current of	39.3	Amperes
C	{ 8 lights each of 5 }	16	candle power requiring a total current of	38.2	Amperes
F	{ 27 lights each of 16 }	16	candle power requiring a total current of	29.5	Amperes
D	{ 28 lights each of 16 }	16	candle power requiring a total current of	30.5	Amperes
E	{ 31 lights each of 16 }	16	candle power requiring a total current of	48.	Amperes
	{ 32 lights each of 16 }	16	candle power requiring a total current of	46	Amperes
2	Mast head light with 1 lamps each of 32	32	candle power requiring a total current of	2.2	Amperes
2	Side light with 1 lamps each of 32	32	candle power requiring a total current of	2.2	Amperes
2	Cargo lights & each 200	200	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. *No arc lights fitted*

Where are the switches controlling the masthead and side lights placed *In 2nd Officers room*

DESCRIPTION OF CABLES.

Main cable carrying *273* Amperes, comprised of *37* wires, each *.101* L.S.G. diameter, *.3000* square inches total sectional area

Branch cables carrying *30* Amperes, comprised of *7* wires, each *.14* L.S.G. diameter, *.03459* square inches total sectional area

Branch cables carrying *7* Amperes, comprised of *7* wires, each *.20* L.S.G. diameter, *.0070* square inches total sectional area

Leads to lamps carrying *1.1* Amperes, comprised of *1* wires, each *.18* L.S.G. diameter, *.00181* square inches total sectional area

Cargo light cables carrying *12* Amperes, comprised of *105* wires, each *.0124* L.S.G. diameter, *.01246* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised india rubber, taped and braided and lead covered in accommodation. Steel armoured where exposed.

Joints in cables, how made, insulated, and protected *No joints except mechanical ones*

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 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 *Clipped to underside of deck lead covered and armoured.*

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *No* ✓
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered and armoured* ✓
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead + 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 *Lead covered cables in bushes* ✓
 How are cables carried through bulkheads, &c. *Armoured cables, holes not bushed through bulkheads, &c. watertight glands*
 How are cables carried through decks *in galvanised iron 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 and armoured* ✓
 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 *Brass guarded fittings* ✓
 Where are the main switches and cut outs for these lights fitted *above deck in suitable places* ✓
 If in the spaces, how are they specially protected *Metal covers* ✓
 Are any switches or cut outs fitted in bunkers *No* ✓
 Cargo light cables, whether portable or permanently fixed *Portable* ✓ How fixed *To M.T. Connection Boxes* ✓
 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 *now* supplied with a voltmeter and *also* an amperemeter, fixed on *switch board*

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 *100* 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.

For CLARKE, CHAPMAN & Co. LTD.

W. A. Woodhouse

Electrical Engineers

Date *Nov. 10th 1910.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *Directly 80 feet*

Distance between dynamo or electric motors and steering compass *72 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>1 1/2</i>	Amperes	<i>is led into</i>	<i>feet from</i>	standard compass	<i>and</i>	<i>feet from</i>	steering compass
A cable carrying	_____	Amperes	_____	<i>feet from</i>	standard compass	_____	<i>feet from</i>	steering compass
A cable carrying	_____	Amperes	_____	<i>feet from</i>	standard compass	_____	<i>feet from</i>	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* courses in the case of the standard compass and *nil* degrees on *all* courses in the case of the steering compass.

Builder's Signature.

Date

GENERAL REMARKS.

The Electric Lighting Installation on this vessel has been fitted as above, tested and found satisfactory and is now respectfully submitted for notation in the

Register Book at this vessel is eligible for THE RECORD. Elec. light.

JWD 15/11/10

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.