

WED. 17 FEB 1897

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 34481

Port of **NEWCASTLE-ON-TYNE** Date of First Survey *19 Jan'y* Date of Last Survey *5 Feby* No. of Visits *6*
 No. in Reg. Book *on the Iron or Steel* **S. 5 "Devon"** Port belonging to *Lanphar*
 Built at *Hebburn* By whom *Arthur Hawthorn & Co* When built *1896-7*
 Owners *Federal S. N. Co. Ltd.* Owners Address *London*
 Yard No. **340** Electric Light Installation fitted by *W. J. Robinson & Co. Ltd.* When fitted *6th Feb. 1897.*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1. 14 Gramme compound Dynamo coupled direct to open type automatic governor high speed engine at 280 Revs.

Capacity of Dynamo *155* Amperes at *60* Volts, whether continuous or alternating current *(Continuous)*

Where is Dynamo fixed *Engine Room, starting platform.*

Position of Main Switch Board *Engine Room* having switches to groups *A, B, C, D* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

One distributor in saloon, with 3 switches.

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 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 *written instruction*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *yes, porcelain & slate bases*

Total number of lights provided for *127* arranged in the following groups:—

A *50* lights each of *16* candle power requiring a total current of *50* Amperes

B *30* lights each of *16* candle power requiring a total current of *30* Amperes

C *33* lights each of *16* candle power requiring a total current of *33* Amperes

D *14* lights each of *16* candle power requiring a total current of *14* Amperes

E lights each of candle power requiring a total current of Amperes

1 Mast head light with *1* lamps each of *32* candle power requiring a total current of *2* Amperes

2 Side light with *1* lamps each of *32* candle power requiring a total current of *4* Amperes

5 Cargo lights of *100* 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 *Bridge for side lights, forecastle for masthead.*

DESCRIPTION OF CABLES.

Main cable carrying *455* Amperes, comprised of *27* wires, each *13* L.S.G. diameter, *.246* square inches total sectional area

Branch cables carrying *30* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.0612* square inches total sectional area

Branch cables carrying *30* Amperes, comprised of *7* wires, each *14* L.S.G. diameter, *.0352* square inches total sectional area

Leads to lamps carrying *1* Amperes, comprised of *1* wires, each *16* L.S.G. diameter, *.0032* square inches total sectional area

Cable light cables carrying *35* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.0612* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated pure and vulcanizing rubber, then taped the whole thoroughly vulcanized together, then covered with longitudinal wraps and strong braiding covered with protective & weather resisting compound.

Joints in cables, how made, insulated, and protected *Running joints soldered with resinous flux, then taped with pure rubber, rubber solution, then black tape to required thickness.*

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 *None*

Are there any joints in or branches from the cable leading from dynamo to main switch board

How are the cables led through the ship, and how protected *In iron piping.*

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 covd. wire.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Iron piping & lead covd. wire.*

What special protection has been provided for the cables near boiler casings *Iron piping.*

What special protection has been provided for the cables in engine room *Iron piping where required, & wood casing.*

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

How are cables carried through decks *Water tight iron flanges.*

Are any cables run through coal bunkers *No* or cargo spaces *No* or spaces which may be used for carrying cargo, stores, or baggage *No*

If so, how are they protected _____

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 _____

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *From distributing 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 _____

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~~ ammeter, fixed *Ken dynamo.*

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.

H. J. Robinson & Co. Ltd. Electrical Engineers

Date *10th Feb 1897*

COMPASSES.

Distance between dynamo or ~~electric~~ and standard compass *30 yards.*

Distance between dynamo or ~~electric~~ and steering compass *28 " —*

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>2</i>	<i>8</i>	<i>5</i>	
<i>6</i>	<i>16</i>	<i>12</i>	

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

The maximum deviation due to electric currents, etc., was found to be *nil* degrees on *all* courses of the standard compass and _____ degrees on _____ course in the case of the steering compass.

FOR *R. & W. HAWTHORN, LESLIE & CO. LIMITED.*

Builder's Signature _____ Date *12/2/97*

GENERAL REMARKS.

One bulkhead, entrance to tunnel, fitted with watertight gland, the only one pierced by the Electric wires.

The installation examined & found satisfactory

John H Heck.

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

Committee's Minute _____

This installation appears to be in accordance with the Rules.

So. Am. Part.

17/2/97

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN