

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of *Newcastle* Date of First Survey *Aug 1<sup>st</sup> '02* Date of Last Survey *Sep 19 '02* No. of Visits *4*  
 No. in on the Iron or Steel *3/3 Kabyllie* Port belonging to *Home*  
 Reg. Book *6 Sup.* Built at *Newcastle* By whom *Wood, Skinner & Co. Ltd.* When built *1902*  
 Owners *Sir R. Dixon & Co.* Owners' Address *Middlesbrough*  
 Yard No. *108* Electric Light Installation fitted by *Patterson Cooper & Co. Ltd.* When fitted *Aug 1902*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo *four pole Shunt Wound coupled direct to*  
*5 1/2 x 5" Robey Single Cylinder Vertical Engine 350 r.p.m.*  
 Capacity of Dynamo *42* Amperes at *110* Volts, whether continuous or alternating current *continuous*  
 Where is Dynamo fixed *Engine Room*  
 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

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

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 *72* arranged in the following groups:—

|            |                      |                |                            |  |   |                    |
|------------|----------------------|----------------|----------------------------|--|---|--------------------|
| A (barges) | 16                   | lights each of | <i>(12 of 32) (4 of 8)</i> | candle power requiring a total current of        | <i>15.6</i>                               | Amperes            |
| B          | 19                   | lights each of | <i>8</i>                   | candle power requiring a total current of        | <i>5.7</i>                                | Amperes            |
| C          | 18                   | lights each of | <i>8</i>                   | candle power requiring a total current of        | <i>5.4</i>                                | Amperes            |
| D          | 16                   | lights each of | <i>8</i>                   | candle power requiring a total current of        | <i>4.8</i>                                | Amperes            |
| E          |                      | lights each of |                            | candle power requiring a total current of        |   | Amperes            |
| 1          | Mast head light with | 1              | lamps each of              | <i>32</i>  | candle power requiring a total current of | <i>1.2</i> Amperes |
| 1          | Side light with      | 1              | lamps each of              | <i>32</i>  | candle power requiring a total current of | <i>1.2</i> Amperes |
| 1          | 12 " " " "           | 1              | " " " "                    | <i>50</i>  | " " " "                                   | <i>1.8</i>         |
|            | Cargo lights of      |                | <i>32</i>                  | candle power, whether incandescent or arc lights | <i>Incandescent.</i>                      |                    |

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

Where are the switches controlling the masthead and side lights placed *Wheelhouse*

## DESCRIPTION OF CABLES.

Main cable carrying *42* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.062* square inches total sectional area  
 Branch cables carrying *12* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *.012* square inches total sectional area  
 Branch cables carrying Amperes, comprised of wires, each L.S.G. diameter, square inches total sectional area  
 Leads to lamps carrying *1.8* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0018* square inches total sectional area  
 Cargo light cables carrying *5* Amperes, comprised of *7* wires, each *22* L.S.G. diameter, *.0043* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

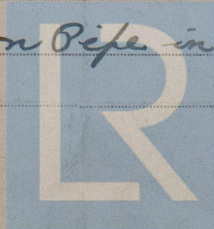
Conductor covered with layer pure Para Rubber, two coats vulcanising India Rubber finally covered with India Rubber coated tape & whole vulcanised together.

Joints in cables, how made, insulated, and protected *no joints*

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

How are the cables led through the ship, and how protected *In Galvanized Iron Pipe in Engine Room & Hold, Wood casing elsewhere*



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OF INSULATION, PROTECTION, ETC.—continued.

places always accessible yes

special protection has been provided for the cables in open alleyways or where exposed to weather or moisture galvanized Iron Pipe

What special protection has been provided for the cables near galley or oil lamps or other sources of heat Pipe

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

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

How are cables carried through beams Hard Wood Plugs through bulkheads, &c. Watertight glands & packed.

How are cables carried through decks Deck Tubes of Galv. Iron Pipe standing 9" above deck.

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 Galv. Iron Pipe

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage yes (Portables)

If so, how are the lamp fittings and cable terminals specially protected Strong wire guards on fitting

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 Cast Iron Connector Boxes

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel bolted to hull.

How are the returns from the lamps connected to the hull by 3/8" Brass Pins & Washers.

Are all the joints with the hull in accessible positions yes.

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 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 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 PATERSON, COOPER & CO., LIMITED.

W. Arthur Ker DIRECTOR

Electrical Engineers

Date 15/9/02

COMPASSES.

Distance between dynamo or electric motors and standard compass 18

Distance between dynamo or electric motors and steering compass 15

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes  | feet from standard compass | feet from steering compass |
|------------------|----------|----------------------------|----------------------------|
| <u>1-8</u>       | <u>6</u> | <u>3</u>                   |                            |
| A cable carrying | Amperes  | feet from standard compass | 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 nil degrees on the course in the case of the standard compass and the degrees on the course in the case of the steering compass.

John S. Wood DIRECTOR

Builder's Signature.

Date September 17<sup>th</sup> 1902

GENERAL REMARKS.

The installation examined & found satisfactory.

John H Heck.

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

27.9.02

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.