

REPORT ON ELECTRIC LIGHTING INSTALLATION. No 44263

Port of *Newcastle-on-Tyne* Date of First Survey *Sep 1 '02* Date of Last Survey *Oct 1 '02* No. of Visits *6*
 No. in Reg. Book *on the Iron or Steel* *43 "Lymbeline"* Port belonging to *Liverpool*
 Built at *Newcastle* By whom *Armstrong Whitworth & Co.* When built *1902*
 Owners *Beau Creek Oil & S.C. Co. Ltd* Owners' Address *Liverpool*
 Yard No. *426* Electric Light Installation fitted by *Sir R. Armstrong Whitworth & Co.* When fitted *September 1902*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single cylinder engine, dia of cylinder 4" x 5" stroke.
The dynamo is of the compound wound 4 poled type.
 Capacity of Dynamo *80* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Starboard side of main Engine Room.*
 Position of Main Switch Board *by the side of the dynamo* having switches to groups *3 groups* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *40 auxiliary switchboards fitted*
 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 *15%* 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 *no wire fuses used*
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *yes, porcelain & Metal Boxes.*
 Total number of lights provided for *41* arranged in the following groups:—
 A *Forward Circuit* 8 lights each of *16* candle power requiring a total current of *4.8* Amperes
 B *Midship* 31 lights each of *16 + 32* candle power requiring a total current of *19.2* Amperes
 C *Aft* 16 lights each of *16* candle power requiring a total current of *9.6* Amperes
 D *Engine & Boiler* 16 lights each of *16* candle power requiring a total current of *9.6* Amperes
 E *Rooms* 1 lights each of *16* candle power requiring a total current of *1.6* Amperes
 2 Mast head lights with 1 lamps each of *32* candle power requiring a total current of *1.2* Amperes each
 2 Side lights with 1 lamps each of *32* candle power requiring a total current of *1.2* Amperes each
 Cargo lights of *—* 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 *40* Amperes, comprised of *19* wires, each *14* L.S.G. diameter, *0.976* square inches total sectional area
 Branch cables carrying *19* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *0.229* square inches total sectional area
 Branch cables carrying *9* Amperes, comprised of *7* wires, each *18* L.S.G. diameter, *0.129* square inches total sectional area
 Leads to lamps carrying *1* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *0.018* square inches total sectional area
 Cargo light cables carrying *—* Amperes, comprised of *—* wires, each *—* L.S.G. diameter, *—* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables insulated with India rubber & lead covered & run in iron pipes— In Engine Room & Boiler Rooms all cables & wires are lead covered & armoured and run in iron pipes.
 Joints in cables, how made, insulated, and protected *—*

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 *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 *In wrought iron pipes*



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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 *In wrought iron pipes*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered & armoured*

What special protection has been provided for the cables near boiler casings *run in iron pipes standing 4" off casings.*

What special protection has been provided for the cables in engine room *Lead covered and armoured*

How are cables carried through beams *holofitted with Bushes* through bulkheads, &c. *Bushed & fitted with glands*

How are cables carried through decks *In deck tubes standing 2 feet above the 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 *they are run in wrought iron pipes.*

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 *In cast iron fittings.*

Where are the main switches and cut outs for these lights fitted *in midship alleyways.*

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 *no cargo lights* How fixed *—*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *This installation is all double wire.*

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 *yes*

Are any switches, cut-outs, or joints of cables fitted in the pump room or companion *no*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *All fittings are watertight*

The installation is *also* supplied with a voltmeter and *but not with* an amperemeter, fixed *on the main* switchboard.

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.

SIR W. G. ARMSTRONG, WHITWORTH & CO. LIMITED.

Electrical Engineers

Date *October 6th 1902*

COMPASSES.

Distance between dynamo or electric motors and standard compass *200 feet.*

Distance between dynamo or electric motors and steering compass *190 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>one</i>	Ampere	<i>10</i>	feet from standard compass	<i>5</i>	feet from steering compass
A cable carrying	<i>four</i>	Ampere	<i>20</i>	feet from standard compass	<i>15</i>	feet from steering compass
A cable carrying	<i>—</i>	Ampere	<i>—</i>	feet from standard compass	<i>—</i>	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 *all* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

Arthur Gulston

SIR W. G. ARMSTRONG, WHITWORTH & CO. LIMITED

Builder's Signature.

Date *10th October 1902*

GENERAL REMARKS.

This installation appears to have been fitted in a satisfactory manner and in accordance with the Rules

G. A. Starks

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

Committee's Minute

It is submitted that this installation appears to meet the Rule requirements

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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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C

Write "Sheer Stroke" opposite its corresponding letter.

DOUBT

Length
and
thickness

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REPORT FORM No. 13.

Form No. 13