

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 40508

Port of NEWCASTLE-ON-TYNE Date of First Survey July 18th 1899 Date of Last Survey Aug 27 1900 No. of Visits 67
 No. in 3 on the Iron or Steel S.S. Bulky Port belonging to London
 Reg. Book 3 Supp Built at Newcastle-on-Tyne By whom Messrs Armstrong Whitworth & Co When built 1900
 Owners Shell Transport & Trading Co Owners Address London
 Yard No. 697 Electric Light Installation fitted by Messrs Blake Chapman & Co Ltd When fitted 1900

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting engine of the vertical type coupled direct to a compound wound continuous current dynamo

Capacity of Dynamo 135 Amperes at 65 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed on starting platform in main engine room.

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

Positions of auxiliary switch boards and numbers of switches on each each light is provided with its own switch fitted near the light.

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 yes

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

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

| | | | | | | |
|-----|-------------------------------------|-----------------|----------------|---|---------------|---------|
| A | 120" projector 1-15 ampere arc lamp | lights each of | 16,000 & 3,000 | nominal candle power requiring a total current of | 75. | Amperes |
| B | 37 | lights each of | 16 | candle power requiring a total current of | 34.2. | Amperes |
| C | 35 | lights each of | 16 | candle power requiring a total current of | 32.4 | Amperes |
| D | 33 | lights each of | 16 | candle power requiring a total current of | 30.5. | Amperes |
| E | | lights each of | | candle power requiring a total current of | | Amperes |
| 1 | Mast head light with | 2 lamps each of | 16 | candle power requiring a total current of | 2. | Amperes |
| 2 | Side light with | 4 lamps each of | 16 | candle power requiring a total current of | 4. | Amperes |
| Two | Cargo lights of | 8-16 C.P. | | candle power, whether incandescent or arc lights | incandescent. | |

If arc lights, what protection is provided against fire, sparks, &c. 1-15 ampere arc lamp with hexagonal lantern.

Where are the switches controlling the masthead and side lights placed in wheel house.

DESCRIPTION OF CABLES.

Main cable carrying 135 Amperes, comprised of 37 wires, each 15 L.S.G. diameter, .154 square inches total sectional area
 Branch cables carrying 35 Amperes, comprised of 7 wires, each 14 L.S.G. diameter, .035 square inches total sectional area
 Branch cables carrying 12 Amperes, comprised of 7 wires, each 12 L.S.G. diameter, .012 square inches total sectional area
 Leads to lamps carrying 1 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 8 Amperes, comprised of 350, 40 wires, each .0053, .013 L.S.G. diameter, .012 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised rubber taped and braided lead covered in addition, lead covered and armoured in exposed positions.

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 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 lead covered and lead covered and armoured cables secured by brass clips fixed close up to the deck.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *except in bunkers, yes*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *had covered in galvanized iron pipes, also had covered and armoured clipped up.*

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

What special protection has been provided for the cables near boiler casings *had covered and armoured.*

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

How are cables carried through beams *in lead bushes* through bulkheads, &c. *in glands.*

How are cables carried through decks *in galvanized iron watertight deck tubes.*

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

If so, how are they protected *in galvanized iron pipes*

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 *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *in cast iron watertight boxes.*

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

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 *in watertight fittings.*

The installation is *now* supplied with a voltmeter and *also* an amperemeter, fixed *on main switchboard*

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 *1000* 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.

H. Walker

Director.

Electrical Engineers

Date *29/8/1900*

COMPASSES.

Distance between dynamo or electric motors and standard compass *140 feet.*

Distance between dynamo or electric motors and steering compass *140 "*

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|----------|----------------------------|----------------------------|
| <i>7</i> | <i>8</i> | <i>6</i> | <i>6</i> |
| <i>1</i> | <i>2</i> | <i>2</i> | <i>2</i> |
| <i>—</i> | <i>—</i> | <i>—</i> | <i>—</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 *latitude* course in the case of the standard compass and *nil* degrees on *latitude & westerly* course in the case of the steering compass.

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

Builder's Signature

Date *30 September 1900*

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules found satisfactory.

Robert Haig.

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

Committee's Minute

It is submitted that this installation appears to be in accordance with the Rules.