

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 47346

Port of Newcastle Date of First Survey 30 June Date of Last Survey 28 July 1904 No. of Visits 6
 No. in Reg. Book on the Iron or Steel sp. "Groslafels" Port belonging to Bremen
 Built at Low Walker By whom Swan Hunter & Wigham Richardson When built 1904
 Owners Hansa Deutsche Damp. Ges. Owners' Address Bremen
 Yard No. 714 Electric Light Installation fitted by Clarke Chapman & Co. Ltd. When fitted 1904

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One vertical Compound double acting open type engine direct coupled to continuous current compound wound dynamo.

Capacity of Dynamo 120 Amperes at 110 Volts, whether continuous or alternating current continuous.

Where is Dynamo fixed Engine room Starboard Side, lower platform.

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

Positions of auxiliary switch boards and numbers of switches on each each light is fitted with a switch fitted close to light.

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

Total number of lights provided for 120 arranged in the following groups:—

A	<u>Forward</u>	<u>17</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>9.27</u>	Amperes
B	<u>Midships</u>	<u>32</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>14.5</u>	Amperes
C	<u>Engine room</u>	<u>39</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>21.27</u>	Amperes
D	<u>Engine room</u>	<u>32</u> lights each of	<u>16</u>	candle power requiring a total current of	<u>17.5</u>	Amperes
E	<u>Projector-20"</u>	<u>1</u> lights each of <u>20,000 cp. nominal</u>		candle power requiring a total current of	<u>60</u>	Amperes
	<u>2 Mast head light with</u>	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
	<u>2 Side light with</u>	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
	<u>8 Cargo lights of</u>	<u>4, 4, 4, 16 cp.</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

If are lights, what protection is provided against fire, sparks, &c. Totally enclosed in hexagonal clear glass lantern; 2-15 ampere Arc lamps.

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

DESCRIPTION OF CABLES.

Main cable carrying 105.9 Amperes, comprised of 37 wires, each 13 L.S.G. diameter, .2431 square inches total sectional area
 Branch cables carrying 60 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0603 square inches total sectional area
 Branch cables carrying 25 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .0222 square inches total sectional area
 Leads to lamps carrying .6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 2.75 Amperes, comprised of 1 wires, each 14 L.S.G. diameter, .0050 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber taped and braided and lead covered overall & where exposed steel armoured over the lead covering.

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 Lead covered and steel armoured & served overall with Bitumen Compound & laid in cement along upper side of deck.

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 steel armoured & served overall with bitumen compound & laid in cement.*

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

What special protection has been provided for the cables near boiler casings *no*

What special protection has been provided for the cables in engine room *no*

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

How are cables carried through decks *in galvanized watertight duct 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 & steel armoured wires, secured close to deck with heavy iron clips.*

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 C.I. Watertight boxes*

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

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 *now* supplied with a voltmeter and *also* an amperemeter, fixed *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 *2,500* 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. Maclean

Director.

Electrical Engineers

Date *Novem. 30th 04*

COMPASSES.

Distance between dynamo or electric motors and standard compass *90 feet.*

Distance between dynamo or electric motors and steering compass *94 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>4.2</i>	<i>10</i>	<i>14</i>	<i>14</i>
<i>1.8</i>	<i>8</i>	<i>12</i>	<i>12</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 *the* course in the case of the standard compass and *nil* degrees on *the* course in the case of the steering compass.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

J. A. Hunter

Builder's Signature.

Date *2 Dec. 1904*

GENERAL REMARKS.

The installation has been 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

6.12.04

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.