

JUL 10 1917

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9761

Port of Middlesbrough Date of First Survey and Date of Last Survey while building No. of Visits 1
 No. in Reg. Book on the Iron or Steel S.S. FARNWORTH Port belonging to Gateshead
 Built at Stockton By whom Richardson Duck & Co When built 1917

Owners Gateshead Owners' Address Gateshead
 Yard No. 651 Electric Light Installation fitted by Messrs Clarke Chapman & Co When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

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

Capacity of Dynamo 120 Amperes at 100 Volts, whether continuous or alternating current continuous ✓

Where is Dynamo fixed in Engine Room Whether single or double wire system is used Double ✓

Position of Main Switch Board 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 & group of lights provided with switches as required

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 50% per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes slate & porcelain

Total number of lights provided for 115 arranged in the following groups:-

A Engine & Deck	48 lights each of	16	candle power requiring a total current of	26.9	Amperes
B Saloon	42 lights each of	16	candle power requiring a total current of	23.6	Amperes
C Engine Room	25 lights each of	16	candle power requiring a total current of	14	Amperes
D Projector	lights each of	10,000	candle power requiring a total current of	4.5	Amperes
E Wireless	lights each of	-	candle power requiring a total current of	2.5	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	1.1	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	1.1	Amperes
4 Cargo lights of	6-16		candle power, whether incandescent or arc lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c. One - 15 Amp Arc Lamp with enclosed clear glass lantern

Where are the switches controlling the masthead and side lights placed in office

DESCRIPTION OF CABLES.

Main cable carrying	120 Amperes, comprised of	37 wires, each	16 S.W.G. diameter, -117	square inches total sectional area
Branch cables carrying	26.9 Amperes, comprised of	7 wires, each	16 S.W.G. diameter, -022	square inches total sectional area
Branch cables carrying	14 Amperes, comprised of	7 wires, each	18 S.W.G. diameter, -0125	square inches total sectional area
Leads to lamps carrying	5.6 Amperes, comprised of	1 wires, each	18 S.W.G. diameter, -0018	square inches total sectional area
Cargo light cables carrying	3.3 Amperes, comprised of	168 wires, each	38 S.W.G. diameter, -0050	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber taped & braided & lead covered where exposed steel armored cable

Joints in cables, how made, insulated, and protected no joints except mechanical ones

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 & steel armored cables run through tween decks & clipped to inside of deck with string in clips

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 & steel Armoured cable*

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

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

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

How are cables carried through beams *in lead boxes* through bulkheads, &c. *watertight glands* *see Moll. th. 11. 7. 17.*

How are cables carried through decks *in galvanized iron deck tiles*

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 *Lead covered & steel Armoured cables*

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 fuses for these lights fitted -

If in the spaces, how are they specially protected -

Are any switches or fuses fitted in bunkers *no*.

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *to W.T. C. Connection 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 -

Is the installation supplied with a voltmeter *Yes*, and with an amperemeter *Yes*, fixed *in Dutchland*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas -

Are any switches, fuses, 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 copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than *650* megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *106 ft*

Distance between dynamo or electric motors and steering compass *100 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.56</i>	<i>12</i>	<i>6</i>	<i>6</i>
<i>.56</i>	<i>6</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 *all* courses in the case of the standard compass and *Nil* degrees on *all* course in the case of the steering compass.

FOR RICHARDSON, DUCK & CO. LTD.

E. Wilson

Builder's Signature.

Date *6th July 1917*

GENERAL REMARKS.

Managing Director

This installation has been fitted in accordance with the Rules. The materials and workmanship are good, and the installation has been examined under full working conditions and found satisfactory. The vessel is fitted with "Wireless"

It is submitted that this vessel is eligible for

THE RECORD. Elec. light. *J.W.D. 12/7/17*

Wm Morrison

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.