

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 68921

Port of NEWCASTLE ON-TYNE Date of First Survey 23rd Jan Date of Last Survey 12th July 16 No. of Visits 9
 No. in SS. Glina on the Iron or Steel SS. Glina Port belonging to an
 Reg. Book Low. Waller Built at Low. Waller By whom Sam. Hunter Wigham Richardson & Co. When built 1916
 Owners Anglo Saxon Petroleum Co. Ltd. Owners' Address an
 Yard No. 976 Electric Light Installation fitted by James Clarke Chapman & Co. When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two single cylinder double acting open type vertical engines direct coupled to two continuous current compound wound dynamos

Capacity of Dynamo 60 + 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 161 arranged in the following groups :-

A	<u>64</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>20.4</u>	Amperes
B	<u>27</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>8.6</u>	Amperes
C	<u>30</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>9.6</u>	Amperes
D	<u>40</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>12.8</u>	Amperes
E	<u>Watches</u>	lights each of		candle power requiring a total current of	<u>30</u>	Amperes
<u>2</u>	Mast head light with	<u>1</u> lamp each of	<u>32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
<u>2</u>	Side light with	<u>1</u> lamp each of	<u>32</u>	candle power requiring a total current of	<u>2.2</u>	Amperes
<u>4</u>	Cargo lights of	<u>6-16</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

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

Where are the switches controlling the masthead and side lights placed in Chart Room

DESCRIPTION OF CABLES.

Main cable carrying	<u>120</u>	Amperes, comprised of	<u>37</u>	wires, each	<u>15</u>	S.W.G. diameter, <u>.150</u>	square inches total sectional area
Branch cables carrying	<u>20.4</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>16</u>	S.W.G. diameter, <u>.022</u>	square inches total sectional area
Branch cables carrying	<u>12.8</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>20</u>	S.W.G. diameter, <u>.0070</u>	square inches total sectional area
Leads to lamps carrying	<u>56</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>18</u>	S.W.G. diameter, <u>.0078</u>	square inches total sectional area
Cargo light cables carrying	<u>3.3</u>	Amperes, comprised of	<u>168</u>	wires, each	<u>38</u>	S.W.G. diameter, <u>.0050</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated india rubber taped & braided & lead covered where exposed steel
Armoured 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

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 cables run in galvanised iron pipes under fore & after gangway & clipped to same with sling iron clips

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 *Lead covered + steel armour cables*

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

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 bunkers* through bulkheads, &c. *in WT glands*

How are cables carried through decks *in galvanized iron steel pipes*

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 *Lead covered cables run in galvanized iron pipes*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coats, 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 WT 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 *on bulkhead*

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 *Yes*

Are any switches, fuses, 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 *special guarded gas light fittings*

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 *600* 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 *July 31st 1916*

COMPASSES. *W. Walker* Chairman.

Distance between dynamo or electric motors and standard compass *232 feet*

Distance between dynamo or electric motors and steering compass *226*

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>.56</i>	<i>6</i>	<i>12</i>	<i>12</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* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

Builder's Signature.

Date *4 August 1916*

GENERAL REMARKS.

The materials and workmanship are good. When completed the installation was tested and worked satisfactorily.

It is submitted that this vessel is eligible for THE RECORD.

Elec light

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

Committee's Minute