

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27107

Port of SUNDERLAND Date of First Survey 14 Nov Date of Last Survey Apr 17 No. of Visits 3  
 No. in on the Iron or Steel S/S. Allendale Port belonging to London  
 Reg. Book Built at Sunderland By whom Osborne Graham & Co. Ltd When built 1917  
 Owners Furness Withy & Co. Ltd Owners' Address Furness House, 111 St. London  
 Yard No. 203 Electric Light Installation fitted by Messrs. Clarke Chapman & Co. Ltd 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 90 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 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 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-oxidisable 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 slate & porcelain

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

A	<u>47</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>26.3</u>	Amperes
B	<u>53</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>29.6</u>	Amperes
C	<u>20</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>11.2</u>	Amperes
D	<u>Nil</u>	lights each of	<u>-</u>	candle power requiring a total current of	<u>2.5</u>	Amperes
E	<u>-</u>	lights each of	<u>-</u>	candle power requiring a total current of	<u>-</u>	Amperes
<u>2</u>	Mast head light with	<u>1</u>	lamps 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>	lamps 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</u>	<u>32</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

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

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

## DESCRIPTION OF CABLES.

Main cable carrying 90 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .094 square inches total sectional area

Branch cables carrying 26.3 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .022 square inches total sectional area

Branch cables carrying 29.6 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .022 square inches total sectional area

Leads to lamps carrying .56 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area

Cargo light cables carrying 6.7 Amperes, comprised of 176 wires, each 38 L.S.G. diameter, .0050 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

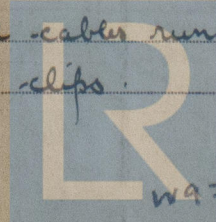
Vulcanized india rubber lapped & braided & lead covered where exposed steel armoured overall

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 & steel armoured cables run through holds & clipped to underside of deck with sling galvanized iron 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 cables

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead covered & armoured 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 bushes through bulkheads, &c. in W.T. glands

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 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 to C.W.T. 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 -

The installation is yes supplied with a voltmeter and yes an amperemeter, fixed on switchboard

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 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.

see below

Electrical Engineers

Date Dec 13 1917

COMPASSES.

Distance between dynamo or electric motors and standard compass 86 ft

Distance between dynamo or electric motors and steering compass 80 "

The nearest cables to the compasses are as follows:—

A cable carrying .56 Amperes 12 feet from standard compass 6 feet from steering compass

A cable carrying .56 Amperes 6 feet from standard compass 12 feet from steering compass

A cable carrying - Amperes - feet from standard compass - 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 no OSBOURNE degrees on all course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

For Clarke, Chapman & Co. Ltd.

Builder's Signature Date

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel listed at full load and found good

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

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

Committee's Minute

OSBOURNE GRAHAM & CO., LIMITED

Director



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