

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 26087

of SUNDERLAND Date of First Survey 4 Apr Date of Last Survey 25 Apr '14 No. of Visits 4
 on the Iron or Steel S.S. Harrovian Port belonging to London
 Built at SUNDERLAND By whom Bartram & Sons Ltd When built 1914
 Owners' Address Mathias House
 Electric Light Installation fitted by Clarke Chapman & Co When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

single cylinder double acting open type vertical engine direct coupled to a
compound wound dynamo
 of Dynamo 62 Amperes at 100 Volts, whether continuous or alternating current continuous
 is Dynamo fixed in Engine Room Whether single or double wire system is used double
 of Main Switch Board near Dynamo having switches to groups A B & C of lights, &c., as below
 of auxiliary switch boards and numbers of switches on each Each light & group of lights provided
with switches as required

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
 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
 fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current
 fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used
 permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit Yes
 switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes. slate & porcelain

Number of lights provided for 102-16cp arranged in the following groups:-

<u>49</u> lights each of <u>16</u> candle power requiring a total current of <u>27.4</u> Amperes
<u>31</u> lights each of <u>16</u> candle power requiring a total current of <u>17.3</u> Amperes
<u>22</u> lights each of <u>16</u> candle power requiring a total current of <u>12.3</u> Amperes
lights each of _____ candle power requiring a total current of _____ Amperes
lights each of _____ candle power requiring a total current of _____ Amperes
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
Side light with <u>1</u> lamps each of <u>32</u> candle power requiring a total current of <u>2.2</u> Amperes
Cargo lights of <u>7-16</u> candle power, whether incandescent or arc lights <u>incandescent</u>

lights, what protection is provided against fire, sparks, &c. _____
 are the switches controlling the masthead and side lights placed in Chart Room.

DESCRIPTION OF CABLES.

able carrying 62 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .06100 square inches total sectional area
 cables carrying 27.4 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .02214 square inches total sectional area
 cables carrying 17.3 Amperes, comprised of 1 wires, each 14 S.W.G. diameter, .00302 square inches total sectional area
 lamps carrying 5.6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area
 light cables carrying 3.9 Amperes, comprised of 168 wires, each 38 S.W.G. diameter, .00502 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

leaded india rubber taped & braided & lead covered where exposed steel
covered with
 cables, how made, insulated, and protected no joints except mechanical ones
 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 any joints in or branches from the cable leading from dynamo to main switch board No.
 the cables led through the ship, and how protected lead covered & steel armored cables run through
on decks & clipped to beam with string 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 lined & steel lined
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead lined & steel lined
 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 WT 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 lined & steel lined 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 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 in switchboard

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 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 May 4th 1914

COMPASSES.

Distance between dynamo or electric motors and standard compass 96 ft
 Distance between dynamo or electric motors and steering compass 90 "

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 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.

G. M. Rhind

Builder's Signature.

Date

GENERAL REMARKS.

This installation as far as could be seen is fitted in accordance with the requirements of the Rules of this Society - Examined under full working conditions & found satisfactory.

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

J. J. Hindley

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 9.12.—Transfer.



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