

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8532

Port of MIDDLESBRO Date of First Survey White Date of Last Survey Building No. of Visits 1
 No. in Reg. Book on the Iron or Steel S.S. Michael Port belonging to
 Built at Middlesbrough By whom Mr Layton Dixon & Co. When built 1914
 Owners Booth Steamship Co. Owners' Address Liverpool
 Yard No. 586 Electric Light Installation fitted by J. H. Holmes & Co. When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two - 4"x6" Open vertical single cylinder engines by Sunderland Forge Co., 120 lbs. steam pressure, - coupled to Two 15/4 "N" open dynamos, compound wound.
 Capacity of each Dynamo 120 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Starboard side of Eng. Room Whether single or double wire system is used single
 Position of Main Switch Board near ships side having switches to groups 1 - 10 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each See sheet attached.

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 100 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

Total number of lights provided for 198 @ 16 cp; 52 @ 32 cp + 26 fan motors arranged in the following groups: - (Total current = 112.5 amperes)
 A lights each of all sheet attached candle power requiring a total current of _____ Amperes
 B lights each of _____ candle power requiring a total current of _____ Amperes
 C lights each of _____ candle power requiring a total current of _____ Amperes
 D lights each of _____ candle power requiring a total current of _____ Amperes
 E, F, G, H, I, J lights each of _____ candle power requiring a total current of _____ Amperes
 2 Mast head lights with 1 lamps each of 32 candle power requiring a total current of 2.24 Amperes
 2 Side lights with 1 lamps each of 32 candle power requiring a total current of 2.24 Amperes
 8 Cargo lights of 6 x 32 candle power, whether incandescent or arc lights incandescent.

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

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

DESCRIPTION OF CABLES.

Main cable carrying 113 Amperes, comprised of 34 wires, each 15 S.W.G. diameter, .150 square inches total sectional area
 Branch cables carrying 28.8 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, .034 square inches total sectional area
 Branch cables carrying 18.8 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Leads to lamps carrying 2 (for Metal Fil.) Amperes, comprised of 3 wires, each 22 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 7.2 Amperes, comprised of 4 wires, each 20 S.W.G. diameter, .0042 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure rubber, vulcanised india rubber, - coated tape, and braided overall, also lead covered, armoured and braided in addition, where specified.

Joints in cables, how made, insulated, and protected

none, extension boxes used instead

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 none

Are there any joints in or branches from the cable leading from dynamo to main switch board none

How are the cables led through the ship, and how protected V.L.R. in casing in Accommodation, V.L.R. in Galv^d piping in Bath Rooms & Lav. - lead covered, Armoured and Braided elsewhere.

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 Cov. & Arm.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat " " "

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 bushed with fibre through bulkheads, &c. stuffing gland

How are cables carried through decks in pipes, flanged and made watertight

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 and Armoured cable.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage none.

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 none.

Cargo light cables, whether portable or permanently fixed portable How fixed portable W.T. connection.

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel with 2 brass lugs and 7/8" bolts.

How are the returns from the lamps connected to the hull with tinned washers and 7/8" R.F. Brass screws.

Are all the joints with the hull in accessible positions yes

Is the installation supplied with a voltmeter yes (2), and with an amperemeter yes (2), fixed on Main Board.

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 2500 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.

J. H. Holmes, Esq. Electrical Engineers Date July 24/14.

COMPASSES.

Distance between dynamo or electric motors and standard compass about 68'-0"

Distance between dynamo or electric motors and steering compass " 62'-0"

The nearest cables to the compasses are as follows:—

A cable carrying	<u>9</u>	Amperes	<u>10</u>	feet from standard compass	<u>5'</u>	feet from steering compass
A cable carrying	<u>17</u>	Amperes	<u>12</u>	feet from standard compass	<u>7</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>Inside</u>	feet from standard compass	<u>Inside</u>	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 every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

FOR SIR HAYLTON DUNN & COMPANY, LIMITED
The Builder Director. Builder's Signature. Date July 29, 1914

GENERAL REMARKS. This installation has been fitted in accordance with the Rules, is of good material and workmanship and was examined under full working conditions and found satisfactory.

It is submitted that this vessel is eligible for THE RECORD. Elec light
5/11
17.8.14

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

