

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1895

Port of Barton-in-Furness Date of First Survey 19th May 1920 Date of Last Survey 22nd March 1921 No. of Visits 45
 No. in Reg. Book 41679 on the Iron or Steel T.S.S. "SCYTHIA" Port belonging to Liverpool
 Built at Barton-in-Furness By whom Vickers Ltd When built 1921
 Owners Cunard Steamship Co. Ltd Owners' Address Cunard Building, Liverpool
 Card No. 493 Electric Light Installation fitted by Vickers Ltd When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Metropolitan Vickers Turbo Generators, ^{Each} 345 K.W. Shunt Wound
One Thornycroft Metropolitan Vickers, 6 Cylinder Paraffin Engine, 36 K.W. Dynamo
 Capacity of Dynamo Each 1700 Amperes at 220 Volts, whether continuous or alternating current Continuous
 Emergency Dynamo 160
 Where Emergency set in Engine Room Port Side Whether single or double wire system is used Three Wire
 Position of Main Switch Board On platform in Engine Room having switches to groups (See Fig. No 493/21) of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each In Switchboard Rooms, Starboard Passage Deck
See accompanying Drawing No 493/21 for Diagrammatic Arrangement of Switchboards, Mains etc.

If fuses are fitted on main switch board to the cables of main circuit Circuit Breakers and on each auxiliary switch board to the cables of auxiliary circuits of fuses 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 3433 arranged in the following groups :-

| | | | | | |
|----------|-----------------|--|--|--------------|---------|
| <u>A</u> | <u>8</u> | lights each of <u>(50W) 1000</u> | candle power requiring a total current of | <u>36.3</u> | Amperes |
| | | lights each of <u>(30W) 25</u> | candle power requiring a total current of | <u>903.0</u> | Amperes |
| | | lights each of <u>16</u> | candle power requiring a total current of | | Amperes |
| <u>D</u> | | lights of <u>(Strip lights)</u> <u>8</u> | candle power requiring a total current of | <u>1.1</u> | Amperes |
| <u>E</u> | | lights each of <u>(Instruments)</u> <u>2 1/2</u> | candle power requiring a total current of | <u>2.3</u> | Amperes |
| | <u>Two</u> | Mast head lights with <u>1</u> lamps each of <u>32</u> | candle power requiring a total current of | <u>1.0</u> | Amperes |
| | <u>Two</u> | Side lights with <u>1</u> lamps each of <u>32</u> | candle power requiring a total current of | <u>1.0</u> | Amperes |
| | <u>Fourteen</u> | Cargo lights of <u>each</u> <u>150</u> | candle power, whether incandescent or arc lights | <u>42.0</u> | " |
| | <u>Twelve</u> | Boat Cluster <u>150</u> | " | <u>20.4</u> | " |

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

Where are the switches controlling the masthead and side lights placed Inside Navigation Light Indicator fitted on bridge

DESCRIPTION OF CABLES.

| | | | | |
|--|--------------------------------------|-----------------------------------|-------------------------------------|--|
| Main cable carrying | <u>1700</u> Amperes, comprised of | <u>91</u> wires, each | <u>.103</u> S.W.G. diameter, | <u>4 - .750</u> square inches total sectional area |
| Branch cables carrying | <u>A-721</u> " " " " " " " " " " " " | <u>91</u> " " " " " " " " " " " " | <u>.093</u> " " " " " " " " " " " " | <u>2 - .60</u> square inches total sectional area |
| Branch cables carrying | <u>B-379</u> Amperes, comprised of | <u>91</u> wires, each | <u>.103</u> S.W.G. diameter, | <u>2 - .75</u> square inches total sectional area |
| Branch cables carrying | <u>C-251</u> " " " " " " " " " " " " | <u>61</u> " " " " " " " " " " " " | <u>.093</u> " " " " " " " " " " " " | <u>4</u> square inches total sectional area |
| Branch cables carrying | <u>D-836</u> Amperes, comprised of | <u>91</u> wires, each | <u>.103</u> S.W.G. diameter, | <u>2 - .750</u> square inches total sectional area |
| Leads to lamps carrying | <u>E-404</u> Amperes, comprised of | <u>91</u> " " " " " " " " " " " " | <u>.103</u> " " " " " " " " " " " " | <u>.75</u> square inches total sectional area |
| For particulars of Branch Cables from Auxiliary Boards see Drawing <u>493/21</u> | <u>P-915</u> Amperes, comprised of | <u>127</u> wires, each | <u>.103</u> S.W.G. diameter, | <u>1.0</u> square inches total sectional area |
| Cargo light cables carrying | Amperes, comprised of | wires, each | S.W.G. diameter, | square inches total sectional area |

DESCRIPTION OF INSULATION, PROTECTION, ETC.

600 Megohm Association Grade V.I.R. Hemp Braided cables
 Where necessary the cables are protected by a lead covering, if a wire armoring as convenient.
 Joints in cables, how made, insulated, and protected No joints
 Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances No joints 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 No joints
 Are there any joints in or branches from the cable leading from dynamo to main switch board No joints
 How are the cables led through the ship, and how protected Small wires in wood casing, large cables in lead to structure Conduit where necessary

200 - 98500 - 858500



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 Galvanized conduit, or sheet steel casing.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered cables in galvanized conduit.

What special protection has been provided for the cables near boiler casings Boiler casings avoided.

What special protection has been provided for the cables in engine room Lead covered & armoured, conduit & sheet steel casing.

How are cables carried through beams Bushed holes through bulkheads, etc. Glands or bushed holes

How are cables carried through decks Deck tubes

Are any cables run through coal bunkers No or cargo spaces No or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Run in steel conduit

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes in spaces which may at times be used for cargo, coals, or baggage.

If so, how are the lamp fittings and cable terminals specially protected Fittings & switches in cast iron cases

Where are the main switches and fuses for these lights fitted On auxiliary switchboard

If in the spaces, how are they specially protected Not in the spaces

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Portable How fixed: Portable

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Not on single wire system

How are the returns from the lamps connected to the hull Not single wire system

Are all the joints with the hull in accessible positions Not single wire system

Is the installation supplied with a voltmeter Yes and with an ammeter Yes

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 compartment

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 English Standards Company and the wires are protected by tinning from the sulphur compounds present in the insulation

Insulation of cables is guaranteed to have a resistance of not less than 1000 ohms per foot at 60 degrees after 24 hours' immersion in water, the test being made after one immersion at not less than 60 degrees 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 warrant that it is at this date in good order and safe working condition.

John Houston Electrical En.

COMPASSES.

Distance between dynamo or electric motors and standard compass Dynamo 220 ft.

Distance between dynamo or electric motors and steering compass 182 "

The nearest cables to the compasses are as follows:—

A cable carrying 9 Amperes 10 feet from standard compass

A cable carrying Amperes feet from standard compass

A cable carrying Amperes feet from standard 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 compasses

standard compass and Nil degrees on all compasses near the case of the steering compass.

BY JOHN HOUSTON

Builder's Signature. Date 27th April 1922

GENERAL REMARKS.

This installation, in so far as it is completed, has been officially certified by the Surveyor on the 15th April 1922. The wiring in the engine room is carried out in galvanized conduit, which tests were not altogether satisfactory. The lighting in the passenger accommodation is as described in my report. The vessel has proceeded to sea and the Surveyor has no objection to her being so employed.

Fee:— £53.0 Applied for 4/21.

John Houston Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI MAY 1922

