

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1895

Port of *Bartow-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 *Bartow-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 1400* Amperes at *220* Volts, whether continuous or alternating current *Continuous*
Emergency Dynamo 160
 Where *as Dynamo fixed Main 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 *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 *3433* arranged in the following groups :—
 A *8* lights each of (500W) *1000* candle power requiring a total current of *35.3* Amperes
 lights each of (30W) *25* candle power requiring a total current of *90.3* Amperes
 lights each of *16* candle power requiring a total current of *1.1* Amperes
 D *8* lights of (Strip lights) *8* candle power requiring a total current of *2.3* Amperes
 E *2 1/2* lights each of (Instruments) *2 1/2* candle power requiring a total current of *1.0* Amperes
Two Mast head lights with 1 lamps each of 32 candle power requiring a total current of 1.0 Amperes
Two Side lights with 1 lamps each of 32 candle power requiring a total current of 1.0 Amperes
Fourteen Cargo lights each of 150 candle power, whether incandescent or are lights 42.0
Twelve Boat Cluster lights, what protection is provided against fire, sparks, &c. 20.4

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

DESCRIPTION OF CABLES.

Main cable carrying *1700* Amperes, comprised of *91* wires, each *103* S.W.G. diameter, *4 - .750* square inches total sectional area
 Branch cables carrying *A-721* Amperes, comprised of *91* wires, each *103* S.W.G. diameter, *2 - .60* square inches total sectional area
 Branch cables carrying *B-379* Amperes, comprised of *91* wires, each *103* S.W.G. diameter, *2 - .60* square inches total sectional area
 Branch cables carrying *C-251* Amperes, comprised of *91* wires, each *103* S.W.G. diameter, *2 - .60* square inches total sectional area
 Leads to lamps carrying *D-936* Amperes, comprised of *91* wires, each *103* S.W.G. diameter, *2 - .60* square inches total sectional area
 For particulars of Branch Cables from Auxiliary Boards see *Drawing No 493/21*
 Cargo light cables carrying *E-404* Amperes, comprised of *127* wires, each *103* S.W.G. diameter, *1.0* 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 substance *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 post-
 main rack insulators, lead covered & armoured cables kept to structure Conduit used where necessary*

200 - 98500 - 85500

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 Cables run in steel conduit, or sheet steel casings.

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

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 casings.

How are cables carried through beams Bushed holes through bulkheads, &c. 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 places 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 Committee 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° C. after 24 hours' immersion in water, the test being made after one immersion at not less than 1000 ohms per foot

The foregoing statements are a correct description of the Electric Light Installation fitted by us on this vessel and are correct at this date in good order and safe working condition.

John 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	Amperes	feet from standard compass	feet from steering compass
<u>9</u>	<u>10</u>	<u>10</u>	<u>10</u>
A cable carrying	Amperes	feet from standard compass	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 courses in the case of the steering compass

standard compass and Nil degrees on all courses in the case of the steering compass

GENERAL REMARKS.

This installation, in so far as it is completed, has been officially tested and found to be satisfactory. The wiring in the 1st & 2nd decks is carried out in the usual manner, which tests were not altogether satisfactory. The lighting in the passenger accommodation is satisfactory and is suitable for the purpose. The vessel has proceeded to sea and the surveyors are satisfied with the work.

Fee:— £53.0 Applied for 4/4/21.

Committee's minute

FRIDAY 4/22

Builder's Signature. Date 27/4/21

John Houston

Surveyor to Lloyd's Register of Shipping



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