

WED. JUL 14 1920

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27791

Port of Sunderland Date of First Survey 25 Mar Date of Last Survey 7 Apr '20 No. of Visits 2  
 No. in on the Iron or Steel Lahore Port belonging to London  
 Reg. Book Built at Sunderland By whom Messrs. R. Thompson & Sons When built 1920  
 Owners The P. & O. Steam Navigation Co. Ltd Owners' Address  
 Yard No. 312 Electric Light Installation fitted by Messrs. Falconar, Cross & Co When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Newcastle-on-Tyne.  
2 - 6 1/2 x 6" Open Type Engines coupled direct to compound wound multipolar dynamos. steam pressure 100 lbs per sq. 360 R.P.M.  
 Capacity of Dynamo 100 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 single wire  
 Position of Main Switch Board In engine room having switches to groups A.B.C.D.E & F of lights, &c., as below  
 Positions of auxiliary fuse boards and numbers of fuses on each 3-way Section Boxes:- Bakery 2, Saloon Passage 1, 10-way Fuse Boards:- Chart Room 1, Wireless Office 1, Saloon Pass: 1, Newcastle 1, Engrs: mess 1, Bakery 1, Accom: aft 1, Engrs: Rm: 1  
 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 150 arranged in the following groups:-  
 A Navigation 13 lights each of 4-32 C.P. 4-30 W. Metal candle power requiring a total current of 9.3 Amperes  
 B Saloon & Lord: 28 lights each of " candle power requiring a total current of 8.4 Amperes  
 C Amidships & aft: 48 lights each of " candle power requiring a total current of 14.4 Amperes  
 D Cargo 33 lights each of " candle power requiring a total current of 9.9 Amperes  
 E Engine and Boiler Rooms 28 lights each of " candle power requiring a total current of 8.4 Amperes  
Wireless 15.0  
 2 Mast head light with 2 lamps each of 32 candle power requiring a total current of 2.4 Amperes  
 2 Side light with 2 lamps each of 32 candle power requiring a total current of 2.4 Amperes  
 6 Cargo lights of 5-6-30W Metal candle power, whether incandescent or arc lights incandescent  
 1 3-30W Metal

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 65.4 Amperes, comprised of 19 wires, each .083 S.W.G. diameter, .1000 square inches total sectional area  
 Branch cables carrying 15 Amperes, comprised of 4 wires, each .064 S.W.G. diameter, .0225 square inches total sectional area  
 Branch cables carrying 14.4 Amperes, comprised of 4 wires, each .048 S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each .048 S.W.G. diameter, .0016 square inches total sectional area  
 Cargo light cables carrying 1.8 Amperes, comprised of 114 wires, each .0060 S.W.G. diameter, .0060 square inches total sectional area

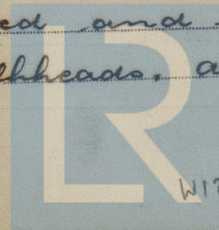
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered & armoured and braided & lead covered cables.  
Lined copper conductors insulated with pure para rubber vulcanised.  
india rubber, taped and braided.  
 Joints in cables, how made, insulated, and protected No joints made.

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 —

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, armoured and braided  
cables led on underside of decks through beams & on bulkheads, all in sight.



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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 (1) Lead covered, armoured & braided cables (2) Carried in G.I. pipes.

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

What special protection has been provided for the cables near boiler casings Lead covered & armoured.

What special protection has been provided for the cables in engine room Lead covered & armoured.

How are cables carried through beams Bushed holes through bulkheads, &c. Watertight glands

How are cables carried through decks Watertight deck tubes

Are any cables run through coal bunkers no 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, armoured & braided cables led between beams.

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 —

Cargo light cables, whether portable or permanently fixed portable How fixed —

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Main cable sweated into Brass socket & bolted to steel structure.

How are the returns from the lamps connected to the hull 3/8" Brass screws tapped into steel structure.

Are all the joints with the hull in accessible positions yes

Is the installation supplied with a voltmeter yes, and with an amperemeter yes, fixed on 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 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.

Salvatorelli & Co. Electrical Engineers Date July 12<sup>th</sup> 1920

COMPASSES.

Distance between dynamo or electric motors and standard compass 95 ft.

Distance between dynamo or electric motors and steering compass 90 .

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>9.3</u>	<u>15</u>	<u>10</u>	<u>10</u>
<u>3</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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 degrees on any course in the case of the standard compass and no degrees on any course in the case of the steering compass.

FOR ROBERT THOMPSON & SONS LTD. Builder's Signature. Date 10<sup>th</sup> July 1920

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel, tested at full load and found good.

It is submitted that this vessel is eligible for THE RECORD Elec. light. 23/7/20 S. C. Davis Surveyor to Lloyd's Register of Shipping. 13.7.20

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.