

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 71221

Port of Newcastle-on-Tyne Date of First Survey 3rd May 1918 Date of Last Survey 12 August 1918 No. of Visits 9

No. in Reg. Book on the Iron or Steel S.S. "WAR. RAJPUT" Port belonging to London
Built at Newcastle By whom Armstrong Whitworth When built 1918

Owners The Shipping Controller for H.M. Ennismore Owners' Address Whitehall, London
Yard No. 47 Electric Light Installation fitted by J. H. Holmes & Co. When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6 1/2 x 6" Open Vertical single cylinder Engine coupled to "Holmes" Dynamo 12/17 1/2 Compound wound

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current

Where is Dynamo fixed in Engine Room Whether single or double wire system is used Double

Position of Main Switch Board near Dynamo having switches to groups A.B.C.D.E. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1-way Section D.P. fuses in clearing feed recess 1-way D.P. fuse box in Ditto 1-way D.P. fuse box in Ditto 1-way D.P. fuse box in starboard passage aft 1-way in midship passage 2-way in Port Room forward 1-way in wheelhouse starboard 1-way in Engine Room

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-oxidisable 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 130 arranged in the following groups: -

Group	Description	Number of Lights	Power per Light	Total Current	Amperes
A	lights each of (20 Watt)	16	16	8.2	Amperes
B	lights each of (20 Watt)	16	16	21.0	Amperes
C	lights each of 16	16	16	16.8	Amperes
D	lights each of 16	16	16	9.0	Amperes
E	Widess hairs lights each of			9	Amperes
1	Must head light with 1 lamp each of	32	32	1.12	Amperes
2	Side lights with 1 lamp each of	32	32	2.24	Amperes
2	Cargo lights of 6 x 16				Incandescent

included above

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

Where are the switches controlling the masthead and side lights placed On front of Bridge

DESCRIPTION OF CABLES.

Main cable carrying	100 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.096 square inches total sectional area
Branch cables carrying	8.2 Amperes, comprised of	7 wires, each	18 S.W.G. diameter,	.012 square inches total sectional area
Branch cables carrying	21 Amperes, comprised of	19 wires, each	18 S.W.G. diameter,	.025 square inches total sectional area
Leads to lamps carrying	.50 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.0018 square inches total sectional area
Cargo light cables carrying	5.3 Amperes, comprised of	3 wires, each	20 S.W.G. diameter,	.003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All conductors are covered by S. G. conductors (insulated) insulated with pure para rubber vulcanized rubber, taped and braided overall.

Joints in cables, how made, insulated, and protected None; Looping in System carried out.

Are all 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 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 along bulk heads in Galley, Store Rooms in Shelter Deck. Arranged & provided clipped to beams. Lead to vessel clipped up in Accommodation.



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 covered*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Arranged & Braided.*

What special protection has been provided for the cables near boiler casings *Ditto.*

What special protection has been provided for the cables in engine room *Ditto.*

How are cables carried through beams *Bushed with Fibre* through bulkheads, &c. *Slitting glands.*

How are cables carried through decks *Lead or Iron Tubes flanged & 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 *Arranged & Braided clipped up.*

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 *None*

Are any switches or fuses fitted in bunkers *No.*

Cargo light cables, whether portable or permanently fixed *Portable.* How fixed *Socket Connections.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *✓*

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 *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 *Yes.*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No. W.P. Switch outside Pump Room.*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Strong Well Glasses & Cable Rings.*

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.

J.H. Holmes & Co. Electrical Engineers Date *Aug 20th 18.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *Approximately 100 feet.*

Distance between dynamo or electric motors and steering compass *" " 95 "*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>2.</i>	Amperes	<i>inside</i>	feet from standard compass	<i>inside</i>	feet from steering compass
A cable carrying	<i>5.2</i>	Amperes	<i>Approx 12</i>	feet from standard compass	<i>Approx 8</i>	feet from steering compass
A cable carrying	<i>21.</i>	Amperes	<i>" " 18</i>	feet from standard compass	<i>" " 14.</i>	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 standard compass and *Nil* degrees on *all* courses in the case of the steering compass.

Edwin L. Cole Builder's Signature. Date *24th / 8 / 18*

GENERAL REMARKS.

One pair of W.S.P.C. & Arranged & Braided cables run from main Board to wireless room via lock-up-box with single pole switch fitted in *Captain's Cabin.* The material and workmanship of this installation is good. *It is submitted that this vessel is eligible for THE RECORD. ELEC. LIGHTS.*

W. Lindale. Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

