

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 11013

Port of **WEST HARTLEPOOL** Date of First Survey **21st July** Date of Last Survey **21st Sept** No. of Visits **8**
 No. in Reg. Book **196** on the Iron or Steel **S.S. "Manchester Corporation"** Port belonging to **Manchester**
 Built at **West Hartlepool** By whom **Furness Whithy & Co. Ltd** When built **1899**
 Owners **Messrs Manchester Liners Limited** Owners Address **Manchester**
 Yard No. **243** Electric Light Installation fitted by **Messrs W.C. Martin & Co Glasgow** When fitted **Sept. 1899**

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound Dynamo, direct coupled to Single Cylinder double acting Engine, fitted with automatic Shaft governor & automatic lubrication

Capacity of Dynamo **132** Amperes at **100** Volts, whether continuous or alternating current **continuous**

Where is Dynamo fixed **In recess at Starting platform.**

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

Positions of auxiliary switch boards and numbers of switches on each **A (Saloon Pantry 5) B (Entrance to Engine room 5) C (Entrance to Engine room 2) D (Engine room bottom Platform 6)**

If cut outs are fitted on main switch board to the cables of main circuit **Yes** and on each auxiliary switch boards 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits **Yes**

Are the cut outs of non-oxidizable metal **Yes** and constructed to fuse at an excess of **fifty** per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases **Yes.**

Total number of lights provided for **192** arranged in the following groups:—

A	50	lights each of	16	candle power requiring a total current of	30.	Amperes
B	66	lights each of	16	candle power requiring a total current of	39.6	Amperes
C	48	lights each of	16	candle power requiring a total current of	25.8	Amperes
D	25	lights each of	16	candle power requiring a total current of	15.	Amperes
E	—	lights each of	—	candle power requiring a total current of	—	Amperes
1	Mast head light with	1	lamps each of	32	candle power requiring a total current of	1.2
2	Side light with	1	lamps each of	32	candle power requiring a total current of	2.4

eight Cargo lights of **6** lights of **16** candle power, whether incandescent or arc lights **incandescent.**

If arc lights, what protection is provided against fire, sparks, &c. **no Arc lights.**

Where are the switches controlling the masthead and side lights placed **In a box in Wheel house on bridge.**

DESCRIPTION OF CABLES.

Main cable carrying	117	Amperes, comprised of	37	wires, each	16	L.S.G. diameter,	.1219	square inches total sectional area
Branch cables carrying	33.6	Amperes, comprised of	19	wires, each	18	L.S.G. diameter,	.0349	square inches total sectional area
Branch cables carrying	15	Amperes, comprised of	19	wires, each	20	L.S.G. diameter,	.0198	square inches total sectional area
Leads to lamps carrying	1.8	Amperes, comprised of	1	wires, each	18	L.S.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	4.8	Amperes, comprised of	135	wires, each	38	L.S.G. diameter,	.0038	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

H.C. Copper wire, tinned, insulated with pure & vulcanized rubber & Tape, the whole vulcanized together, Braided & Compounded. Enclosed in strong wood casing in Cabins etc. and sheathed in steel armour in engine room, cattle spaces etc.

Joints in cables, how made, insulated, and protected **no joints.**

Are all the joints of cables thoroughly soldered, resin only having been used as a flux **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.**

How are the cables led through the ship, and how protected **In strong wood casing in Cabins etc, Steel armoured wire only is used in engine room, Cattle space & other open parts.**

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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

Enclosed in

Watertight Metal Tubes.

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

Armoured wire used.

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

Armoured wire used

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

Armoured wire used

How are cables carried through beams

Insulating bushes where unarmoured through bulkheads, &c.

Watertight glands.

How are cables carried through decks

Through tubes fitted watertight to decks.

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

Armoured cables carried through beams close to deck

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

In Cattledeck

If so, how are the lamp fittings and cable terminals specially protected

By strong Iron covers.

Where are the main switches and cut outs for these lights fitted

In engine room and forward alleyway.

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers

no.

Cargo light cables, whether portable or permanently fixed

portable.

How fixed

In cases 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

VESSELS BUILT FOR CARRYING PETROLEUM

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 installation is

now

supplied with a voltmeter, and

also

an amperemeter, fixed on Switchboard.

The copper used is guaranteed to have a conductivity of

98

per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than

2,000

megohms per

statute mile after 24 hours' immersion in seawater.

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.

W.S. Martin & Co.

Electrical Engineers

Date 13th Sept 1899

COMPASSES.

Distance between dynamo or electric motors and standard compass

84 feet

Distance between dynamo or electric motors and steering compass

84 feet

The nearest cables to the compasses are as follows:—

A cable carrying

.6

Amperes

— 5 (Port) feet from standard compass

— 5 (Port) feet from steering compass

A cable carrying

.6

Amperes

— 5 (Starb) feet from standard compass

— 5 (Starb) feet from steering compass

A cable carrying

5.4

Amperes

— 9 feet from standard compass

— 6 feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power

No

The maximum deviation due to electric currents, etc., was found to be

degrees on

course in the case of the

standard compass and

degrees on

course in the case of the steering compass.

FURNESS, WITBY & CO., LIMITED

Des. J. Mills

Builder's Signature

Date

Oct 6th 1899

GENERAL REMARKS.

The bulk & decks, where pierced, are made w.p. by fitting the cables thro' w.p. glands. No cables are led thro' the bunkers. The cables are led up inside engine casing, and along underside of upper d.k. beams. to the cattle space. No cables are led thro' the cargo holds.

C.R. Burney. Richard Burney

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

Committee's Minute

It is submitted that this installation appears to be in accordance with the Rules.

14.10.99.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.