

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 470

Port of Newcastle, Barry Date of First Survey Nov 14 Date of Last Survey Nov 30 04 No. of Visits 3  
 No. in Reg. Book on the Iron or Steel S.S. Coms. Port belonging to West Hartlepool  
 Built at W. Hartlepool By whom Furness, Withy & Co. Ltd When built  
 Owners Furness, Withy & Co. Ltd Owners' Address West Hartlepool  
 Yard No. 262 Electric Light Installation fitted by Furness, Withy & Co. Ltd When fitted 1904

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

A compound wound dynamo, coupled direct to single cylinder engine, running at a speed of 190 revolutions at 100 lbs steam pressure.  
 Capacity of Dynamo 200 Amperes at 85 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Recess, Starls, Starting Platform Whether single or double wire system is used Double Wire  
 Position of Main Switch Board Near Dynamo having switches to groups 6 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Forecastle 1 @ 8, 1 @ 5 Saloon 1 @ 12, 1 @ 3, Navigation 1 @ 5, Engineers Accommodation 3 @ 4, Engine room 1 @ 8, 3 @ 3, Aft 1 @ 7, 1 @ 3, Amidships 1 @ 4  
 If cut outs 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 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 50 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 198 arranged in the following groups:—

A	30	lights each of	16	candle power requiring a total current of	21.0	Amperes
B	29	lights each of	16	candle power requiring a total current of	20.3	Amperes
C	28	lights each of	16	candle power requiring a total current of	19.6	Amperes
D	27	lights each of	16	candle power requiring a total current of	18.9	Amperes
E	30	lights each of	16	candle power requiring a total current of	21.0	Amperes
F	48	lights each of	16	candle power requiring a total current of	33.6	Amperes
1	Mast head light with	1 lamps each of	32	candle power requiring a total current of	1.4	Amperes
2	Side lights with	1 lamps each of	32	candle power requiring a total current of	2.8	Amperes
4	Cargo lights of	6 @ 16 each		candle power, whether incandescent or arc lights	Incandescent	

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

Where are the switches controlling the masthead and side lights placed Wheelhouse on Bridge

## DESCRIPTION OF CABLES.

Main cable carrying 186 Amperes, comprised of 37 wires, each 14 L.S.G. diameter, 0.186 square inches total sectional area  
 Branch cables carrying 61.2 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, 0.0612 square inches total sectional area  
 Branch cables carrying 61.2 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, 0.0612 square inches total sectional area  
 Leads to lamps carrying 61.2 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, 0.0612 square inches total sectional area  
 Cargo light cables carrying \_\_\_\_\_ Amperes, comprised of \_\_\_\_\_ wires, each \_\_\_\_\_ L.S.G. diameter, \_\_\_\_\_ square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Best vulcanized rubber, taped & braided - Sheathed in steel armour in Tween decks and engine room & stokehold. Twin lead covered in saloon and accommodation

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 None. 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 Steel armoured and wood casing in angle irons under beams



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

They in places always accessible Yes

Special protection has been provided for the cables in open alleyways or where exposed to wet or moisture Steel armour and wood casing

Special protection has been provided for the cables near galleys or oil lamps or other sources of heat Steel armour

Special protection has been provided for the cables near boiler casings Steel armour

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

How are cables carried through beams Fibre bushes through bulkheads, &c. Watertight glands

How are cables carried through decks Iron pipes made watertight

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 Steel armour and wood casing

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

If so, how are the lamp fittings and cable terminals specially protected Enclosed in metal cases

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

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 Brass Watertight plugs & sockets

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 ✓

The installation is ✓ supplied with a voltmeter and ✓ an amperemeter, fixed

**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 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 2000 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.

FURNESS, WITBY & CO., LIMITED

E. W. Diver Electrical Engineers

Date 26.1.05

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 112 feet

Distance between dynamo or electric motors and steering compass 104 feet

The nearest cables to the compasses are as follows:—

A cable carrying <u>5.4</u> Amperes	<u>5</u> feet from standard compass	<u>8</u> feet from steering compass
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 ✓

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

E. W. Diver Builder's Signature.

Date 26 Jan 1905

**GENERAL REMARKS.**

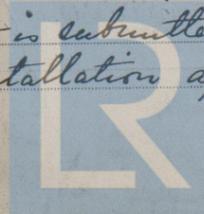
In our opinion this installation merits the approval of the Committee

Leonard Challors

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

Committee's Minute \_\_\_\_\_

It is submitted that this installation appears to be satisfactory



Lloyd's Register Foundation

31.1.05

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

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