

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12776.

Port of WEST HARTLEPOOL Date of First Survey 11<sup>th</sup> Sept. Date of Last Survey 22nd Nov. No. of Visits 28  
 No. in 35 on the Iron or Steel SS "Clan Macpherson" Port belonging to Glasgow  
 Reg. Book 1852 Built at West Hartlepool By whom Furness Withy & Co. Ltd When built 1905  
 Owners Gayzer, Irvine & Co. Owners' Address Glasgow  
 Yard No. 287 Electric Light Installation fitted by Furness Withy & Co. Ltd When fitted 1905

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

12 H.P. 4 pole compound wound dynamo coupled direct to single cylinder engine 8" dia 9" stroke 200 revs per min 80 lbs steam pressure.

Capacity of Dynamo 185 Amperes at 65 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine room starting platform Whether single or double wire system is used double

Position of Main Switch Board near dynamo having switches to groups 7 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Towards crew accommodation one @ Saloon  
1 @ Navigation 1 @ After crew accommodation 1 @ Engine room 2 @ 3  
1 @ 3. 1 @ 4. Cargo clusters 1 @ 4 & 1 @ 3. Projector 1.

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 16 of 16 c.p. 2 incandescent & 1 projector arranged in the following groups:—

A 108 lights each of 16 candle power requiring a total current of 97 Amperes

B lights each of lights candle power requiring a total current of Amperes

C lights each of lights candle power requiring a total current of Amperes

D lights each of lights candle power requiring a total current of Amperes

E lights each of lights candle power requiring a total current of Amperes

2 Mast head lights with 1 lamps each of 32 candle power requiring a total current of 3.6 Amperes

2 Side lights with 1 lamps each of 32 candle power requiring a total current of 3.6 Amperes

4 Cargo lights of 8 lamps each of 16 candle power, whether incandescent or arc lights Incandescent

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

Where are the switches controlling the masthead and side lights placed In wheelhouse on bridge

## DESCRIPTION OF CABLES.

Main cable carrying 185 Amperes, comprised of 37 wires, each 14 L.S.G. diameter, .186 square inches total sectional area

Branch cables carrying 60 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0612 square inches total sectional area

Branch cables carrying 35 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0344 square inches total sectional area

Leads to lamps carrying 7 Amperes, comprised of 7 wires, each 20 L.S.G. diameter, .00714 square inches total sectional area

Cargo light cables carrying 35 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0344 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

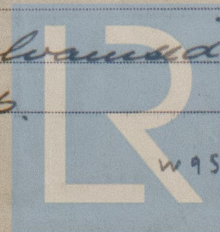
Vulcanised rubber, taped & braided over, carried in wood casings  
Iron lead covered in Saloon only

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 — 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 Passed through galvanised iron tube under deck beams, tubes clipped up.



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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 wood casings

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

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

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

How are cables carried through beams under beams through tubes through bulkheads, &c. water tight stuffing boxes

How are cables carried through decks in iron pipes

Are any cables run through coal bunkers No or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected in iron tubes in cargo spaces

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 cut outs for these lights fitted ✓

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 terminals protected by brass boxes

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 on switchboard

**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.

Electrical Engineers

Date Nov 25-1905

**COMPASSES.**

per J. H. Parker

Distance between dynamo or electric motors and standard compass 116 ft

Distance between dynamo or electric motors and steering compass 120 ft

The nearest cables to the compasses are as follows:—

A cable carrying 12 Amperes 11 feet from standard compass 16 feet from steering compass

A cable carrying 10 Amperes 30 feet from standard compass 22 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 \_\_\_\_\_ course in the case of the

standard compass and nil degrees on \_\_\_\_\_ course in the case of the steering compass.

FURNESS, WITBY & CO., LIMITED.

Builder's Signature.

Date Nov. 25<sup>th</sup> 1905.

**GENERAL REMARKS.**

The electric installation of this vessel is fitted as herein described, & in accordance with the requirements of the rules. It has been tested under full load and found to work well.  
A. J. Graham.

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

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

It is submitted that this installation appears to be satisfactory

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30.11.05

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.