

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 10433.

Port of **WEST HARTLEPOOL**. Date of First Survey *17th Dec 1897* Date of Last Survey *4th Jan 1898* No. of Visits *110*.
 No. in on the Iron or Steel *S.S. "Victoria"* Port belonging to *W. Hartlepool*.
 Reg. Book *6 Sup 5* Built at *West Hartlepool* By whom *Furness Withy & Co.* When built *1897*
 Owners *Wilson & Furness - Leyland* Owners Address *London, E.C.*
 Yard No. *231* Electric Light Installation fitted by *W.H. Allen Son & Co.* When fitted *1897*.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 9x7" single cylinder engines coupled direct to compound wound dynamos, mounted on cast iron baseplates

Capacity of Dynamo *165* Amperes at *62* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *in bunker recess, at starting platform*

Position of Main Switch Board *near dynamos* having switches to groups *seven* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *one auxiliary board at top platform in engine room near door, containing switches, two 4-way distributing fuse blocks & separate fuses*

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 cessel 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 *387* arranged in the following groups:—

A	Chart House	12 lights each of 16 cp	& 3 of 32 candle power requiring a total current of	18	Amperes
B	Bridge & Signals	101 lights each of 16	candle power requiring a total current of	101	Amperes
C	Bridge & Starboard	101 lights each of	candle power requiring a total current of	101	Amperes
D	Cattle & Hold	36 lights each of	candle power requiring a total current of	36	Amperes
E	Coop & Forehold	38 lights each of	candle power requiring a total current of	38	Amperes
	1 Mast head light with	1 lamp each of 32	candle power requiring a total current of	2	Amperes
	2 Side lights with	1 lamp each of 32	candle power requiring a total current of	4	Amperes
	7 Cargo lights of	128	candle power, whether incandescent or are lights	incandescent	

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

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

DESCRIPTION OF CABLES.

Main cable carrying	165 Amperes, comprised of	37 wires, each 14	L.S.G. diameter, .186	square inches total sectional area
Branch cables carrying	34 Amperes, comprised of	19 wires, each 18	L.S.G. diameter, .034	square inches total sectional area
Branch cables carrying	4 Amperes, comprised of	7 wires, each 22	L.S.G. diameter, .0043	square inches total sectional area
Leads to lamps carrying	1 Ampere, comprised of	1 wire, each 18	L.S.G. diameter, .0018	square inches total sectional area
Cargo light cables carrying	8 Amperes, comprised of	145 wires, each 38	L.S.G. diameter, .00409	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure rubber, two coats vulcanising rubber, one layer india-rubber tape, the whole vulcanised, & lead covered throughout the cabins, saloons &c, elsewhere armoured or lead cov^d & armoured

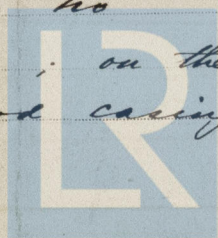
Joints in cables, how made, insulated, and protected *joints made according to the recognised methods, insulated with felt tape, pure rubber, & finally well lapped with gopherite tape & sealed over with lead.*

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

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 wood casing, on the lower deck*
Armoured cables secured by clip, no wood casing

Cargo 56 lights of 16 cp. requiring a total current of 56 amperes



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes, except those in holds.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *lead covering*

& strong wood casing.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *lead covering & wood backing*

What special protection has been provided for the cables near boiler casings *lead covering & armouring*

What special protection has been provided for the cables in engine room *armouring or lead covering & armouring*

How are cables carried through beams *holes bushed with fibre through bulkheads, &c. holes bushed with fibre*

How are cables carried through decks *in pipes made watertight in the deck & bushed with fibre*

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 *armoured with g.i. wires*

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 *cast iron covers to lamp fittings & cast iron junction boxes*

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

~~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 *by gunmetal socket & couple*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *through holding down bolts of dynamo.*

How are the returns from the lamps connected to the hull *soldered to 3/8" brass screws*

Are all the joints with the hull in accessible positions *yes*

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 *yes* supplied with *two* voltmeter and *two* 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 *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.

For W. H. ALLEN, SON & Compy.

J. C. Cleave.

Electrical Engineers

Date *14th Jan'y 1898*

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 ft*

Distance between dynamo or electric motors and steering compass *94 ft*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying <i>18</i>	<i>40</i>	<i>38</i>	<i>38</i>
A cable carrying <i>4</i>	<i>100</i>	<i>8</i>	<i>8</i>
A cable carrying <i>2</i>	<i>4</i>	<i>4</i>	<i>4</i>

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.

For FURNESS, WITHEY & CO., LIMITED,

N. W. Withey

Director.

Builder's Signature

Date *January 6th 1898*

GENERAL REMARKS.

Two dynamo engines are fitted on stbd side of engine room; the cables made N.E. through deck & bulkheads by fitting them through metal flanges. No cables through bunkers.

C. E. Burney. Richard H. H. & Co.
Surveyors to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

This installation appears to be fitted in accordance with the Rules

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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN