

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of West Hartlepool

Received at London Office DEC 1893

No. 9266 \*  
 No. in Reg. Book. \_\_\_\_\_  
 Name of Ship "Greenboiler" Built at Furness, Withy, & Co. Ltd When built 1893  
 Electric Light Installation fitted by Clarke, Chapman, & Co. Limited when fitted November 1893

## DESCRIPTION OF DYNAMO AND ENGINE.—

Vertical Engine (single cylinder) coupled direct on same shaft  
a compound wound Dynamo.

Capacity of Dynamo 115 Amperes at 65 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Engine Room

## LAMPS.—

Is vessel wired on single or double wire system Double Total number of lights 126 arranged in the following groups:—

Group	Lights	Candle Power	Amperes
A	<u>30</u>	<u>16</u>	<u>28</u>
B	<u>30</u>	<u>16</u>	<u>28</u>
C	<u>18</u>	<u>16</u>	<u>17</u>
D	<u>16</u>	<u>16</u>	<u>15</u>
E	<u>22</u>	<u>16</u>	<u>20</u>
F	<u>10</u>	<u>16</u>	<u>9</u>

Mast head light with \_\_\_\_\_ lamps each of \_\_\_\_\_ candle power requiring a total current of \_\_\_\_\_ Amperes

Side light with \_\_\_\_\_ lamps each of \_\_\_\_\_ candle power requiring a total current of \_\_\_\_\_ Amperes

Four Cargo lights of 4 16 cp. lamps each candle power, whether incandescent or arc lights Incandescent

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

## SWITCHES AND CUT-OUTS—

Position of Main Switch Board Engine Room having switches to groups 2 main switches on board of lights as above

Positions of other switch boards and numbers of switches on each \_\_\_\_\_

If cut outs are fitted to main circuit Yes and to each auxiliary circuit Yes

and at each position where cable is branched or reduced in size Yes

If vessel is wired on the double wire system are cut outs fitted on each wire 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

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 Yes

How are the lamps specially protected in places liable to the accumulation of vapour or gas \_\_\_\_\_

Are all switches and cut-outs constructed of unflammable materials and fitted on unflammable bases Yes

## DESCRIPTION OF CABLES.—

Main cable carrying 75 Amperes, comprised of 19 wires, each 15 legal standard wire gauge diameter

Branch cables carrying 22 Amperes, comprised of 7 wires, each 16 legal standard wire gauge diameter

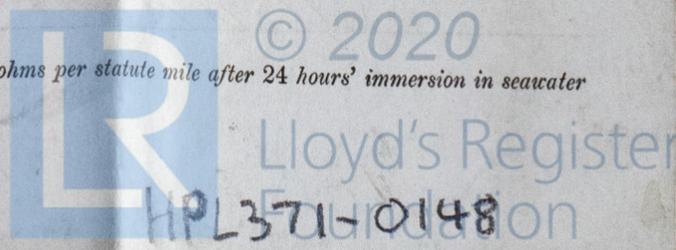
Branch cables carrying 10 Amperes, comprised of 7 wires, each 18 legal standard wire gauge diameter

Leads to lamps One Amperes, comprised of 1 wires, each 16 + 1/18 legal standard wire gauge diameter

Cargo light cables carrying 4 Amperes, comprised of 160 wires, each 40 legal standard wire gauge diameter

The copper used has 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



DESCRIPTION OF INSULATION, PROTECTION, &c.—

Insulated Pure I.R., then vulcanizing I.R., I.R. coated tape, & the whole vulcanised together & drawn into lead tubes, all joints being lead-covered.

Joints in cables, how made, insulated, and protected Taped & covered with lead properly soldered

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

How are cables led throughout the ship Engine Room, Storehold, Tunnel, & Galley &c, cables are in lead tubes, then taped & iron sheathed and fixed with brass clips, otherwise laid in casing close against deck, & with wood plugs throughout.

What special protection has been provided for the cables in open alleyways See above

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

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

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

How are cables carried through decks In deck tubes with teak plugs and through bulkheads through tubes & teak plugs

Are any cables run through coal bunkers Yes or cargo spaces If so, how are they protected carried in galvanized iron pipes clipped to the beams.

Are any lamps fitted in coal bunkers or spaces which may be used for cargo The decks are all for cattle.

If so, how are they specially protected

Cargo light cables, whether portable or permanently fixed Portable How fixed

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

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of Six hours' duration

The insulation resistance of the whole installation was not less than 120,000 ohms

The installation is supplied with a voltmeter and an amperemeter, fixed on main Switchboard.

General Remarks.—

Flexible cables for use with hand lamps in Bunkers are sheathed with iron wire.

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 CLARKE, CHAPMAN & CO. LTD.

John B. Hurieaux

Electrical Engineers

Date 7<sup>th</sup> Dec. 1893

COMPASSES.—

Distance between dynamo and standard compass

90 feet

Distance between dynamo and steering compass

84 feet

The nearest cables to the compasses are as follows:—

A cable carrying One Amperes six feet from standard compass three feet from steering compass

A cable carrying " Amperes 205 feet from standard compass 3 ft 6 ins. 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.

For FURNESS, WITBY & CO. LIMITED.

L. Mills.

Builder's Signature

Date 13<sup>th</sup> Dec. 1893

A. Stoddart

Surveyor's Signature

Date 12<sup>th</sup> Dec. 1893



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