

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of *Dundee*

Received at London Office *1/9/91*

No. *5629* *

No. in *1* Name of Ship *Berlin* Built at *Dundee* When built *1891*

Reg. Book.

Electric Light Installation fitted by *Palmerston Hooper* when fitted *14 August 1891*

DESCRIPTION OF DYNAMO AND ENGINE.—

Vertical inverted cylinder Engine 4 1/2" by 4" stroke Dynamo a compound wound Phoenix type fitted for belt driving capable of giving 5400 watts 850 revolutions

Capacity of Dynamo *54* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Stronger plate Starboard side of Engine Room*

LAMPS.—

Is vessel wired on single or double wire system *double* Total number of lights *Counting 50 C.P. as one lamp each 83* arranged in the following groups:—

A *22* lights each of *16* candle power requiring a total current of *11* Amperes

B *14* lights each of *16* candle power requiring a total current of *9* Amperes

C *6* lights each of *16* candle power requiring a total current of *3* Amperes

D *14* lights each of *16* candle power requiring a total current of *9* Amperes

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

A Mast head light with *2* lamps each of *16* candle power requiring a total current of *1* Amperes

Two Side light with *2* lamps each of *16* candle power requiring a total current of *2* Amperes

5 Cargo lights of *3 of 50 + 2 of 16* candle power, whether incandescent or arc lights *Incandescent*

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

SWITCHES AND CUT-OUTS—

Position of Main Switch Board *Engine Room* having switches to groups *A B C + D* of lights as above

Positions of other switch boards and numbers of switches on each *no other*

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 *cut outs on single pole only*

Are the cut outs of non-oxidizable metal *yes of tin* 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

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 porcelain + slate*

DESCRIPTION OF CABLES.—

Main cable carrying *45* Amperes, comprised of *19* wires, each *No 16* legal standard wire gauge diameter

Branch cables carrying *11* Amperes, comprised of *7* wires, each *"* legal standard wire gauge diameter

Branch cables carrying *9* Amperes, comprised of *7* wires, each *No 18* legal standard wire gauge diameter

Leads to lamps *3* Amperes, comprised of *one* wires, each *No 16* legal standard wire gauge diameter

Cargo light cables carrying *2* Amperes, comprised of *7* wires, each *No 22* legal standard wire gauge diameter

The copper used has a conductivity of *96* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater

DESCRIPTION OF INSULATION, PROTECTION, &c.—

Insulation of pure rubber, vulcanised rubber, rubber tape coating then vulcanised together braided & covered with insulating compound. Protected in strong wood casing. Lead pipes when considered necessary

Joints in cables, how made, insulated, and protected Soldered with resin, wrapped with 2 layers pure rubber strip 2 layers ozonated tape, coating of rubber solution finished with lead tape then varnished

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

How are cables led throughout the ship in strong wood casing going aft through the alleyways to the cabins thence along bulkheads & partitions all being kept outside of hammocks &c. the fore-castle was all led through foreholds

What special protection has been provided for the cables in open alleyways Lead covered wire casing made watertight

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat No wires run over undue heat

What special protection has been provided for the cables near boiler casings No wires fixed to boiler casing

What special protection has been provided for the cables in engine room Lead covered wire watertight casing when necessary

How are cables carried through decks Brass tubes lined with wood, wires in separate grooves and through bulkheads Oak wood flaps with separate grooves for ++ wires

Are any cables run through coal bunkers No or cargo spaces Yes If so, how are they protected in strong wood casing slaid in such a way as to prevent being damaged by cargo

Are any lamps fitted in coal bunkers or spaces which may be used for cargo No

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 6 hours' duration Yes

The insulation resistance of the whole installation was not less than 100,000 ohms

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

General Remarks.—

The whole installation is fitted with the best materials & carried out to the Rules of Fire Insurance Co. as in Land installations

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. E. Thompson & Co. Electrical Engineers
W. E. Martin

Date 13th Aug. 1891

COMPASSES.—

Distance between dynamo and standard compass

90 ft
40 ft

Distance between dynamo and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying one Ampere fitted over binnacle 10 ft from standard compass 10 ft from steering compass

A cable carrying four Amperes 20 feet from standard compass 10 ft 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 Nil degrees on Nil course in the case of the standard compass

and Nil degrees on Nil course in the case of the steering compass.

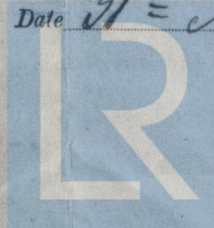
W. E. THOMPSON & Co. Limited.

Builder's Signature

Date 31st August 1891.

Surveyor's Signature

Date 31st August 1891.



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