

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 13434\* Port of Glasgow  
 No. in Reg. Book. Name of Ship Barcelona Built at Glasgow When built May 95  
 Electric Light Installation fitted by Wm Harrow & Co Ltd when fitted May 95

MON 17 JUN 1895  
 Received at London Office

## DESCRIPTION OF DYNAMO AND ENGINE.—

Two-pole dynamo compound wound with ring armature  
coupled direct to a vertical high speed engine

Capacity of Dynamo 150 Amperes at 60 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed on upper part of engine room port side.

## LAMPS.—

Is vessel wired on single or double wire system double Total number of lights 99 arranged in the following groups:—

A 30 lights each of 16 & 32 candle power requiring a total current of 34 Amperes

B 31 lights each of 16 candle power requiring a total current of 31 Amperes

C 26 lights each of 16 & 32 candle power requiring a total current of 28 Amperes

D 10 lights each of 16 candle power requiring a total current of 50 Amperes

E 1 lights each of search lamp candle power requiring a total current of Amperes

1 Mast head light with 1 lamp each of 32 candle power requiring a total current of 2 Amperes

2 Side light with 1 lamp each of 32 candle power requiring a total current of 2 Amperes

Four Cargo lights of 5 x 16 candle power, whether incandescent or arc lights incandescent

If arc lights, what protection is provided against fire, sparks, &c. enclosed globe completely wired

## SWITCHES AND CUT-OUTS.—

Position of Main Switch Board near dynamo 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 switchboard except  
one two way board in lamp room for search light  
& arc lamp.

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 tin wire 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 Yes

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

## DESCRIPTION OF CABLES.—

Main cable carrying 150 Amperes, comprised of 37 wires, each 15 legal standard wire gauge diameter

A Branch cables carrying 30 Amperes, comprised of 17 wires, each 14 legal standard wire gauge diameter

B Branch cables carrying 31 Amperes, comprised of 7 wires, each 14 legal standard wire gauge diameter

C Leads to lamps 26 Amperes, comprised of 7 wires, each 14 legal standard wire gauge diameter

D Cargo light cables carrying 50 Amperes, comprised of 119 wires, each 16 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 600 megohms per statute mile after 24 hours' immersion in seawater



1373795.

DESCRIPTION OF INSULATION, PROTECTION, &c.—

All wire & cable of best Silvertown manufacture insulated (I) pure rubber tape, (II) vulcanising rubber tape vulcanised (III) braided hemp or jute covered.

Joints in cables, how made, insulated, and protected very few joints used. insulated with pure rubber tape & solution, vulcanised tape & solution cemented with solution.

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

Yes

How are cables led throughout the ship

from the engine room along the alleyway clear of bunkers & fore & aft through the seven decks mast head wires run in 1/2 inch galvanised pipe.

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

run in lead casing & white lead

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

none so placed

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

stout lead casing

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

lead casing & iron pipes

How are cables carried through decks

through galvanised plates and through bulkheads

through lead plates

Are any cables run through coal bunkers

no

or cargo spaces

Yes

If so, how are they protected

in stout casing

running between the sparrows on sides of ship

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

24

hours' duration

The insulation resistance of the whole installation was not less than

200,000

ohms

The installation is

supplied with a voltmeter and

an amperemeter, fixed

General Remarks.—

All wire & cable used of best vulcanised rubber & work done on the distributing box system with as few joints as possible.

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.

Wm. Harvie & Co. 2<sup>nd</sup>

Electrical Engineers

Date June 11<sup>th</sup> 95.

COMPASSES.—

Distance between dynamo and standard compass

Distance between dynamo and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying

Amperes

feet from standard compass

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

Yes

The maximum deviation due to electric currents, etc., was found to be

nothing

degrees on

any

course in the case of the standard compass

and

nothing

degrees on

any

course in the case of the steering compass.

Charles Connell

Builder's Signature

Date

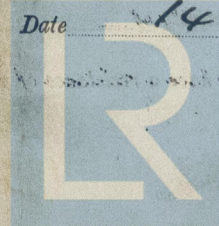
14 June 1895

Thomas Warren

Surveyor's Signature

Date

14 June 1895



Lloyd's Register Foundation