

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 13398*

Port of Glasgow

Received at London Office

18 JAN 1895

No. in Reg. Book. 18 Suff.

Name of Ship

'Arundel Castle'

Built at

Glasgow

When built

1894

Electric Light Installation fitted by

Siemens Bros. & Co.

when fitted

1894

Completed 1895

DESCRIPTION OF DYNAMO AND ENGINE.—

Consisting of 2 sets of Siemens H.B. 12/20% compound wound dynamos coupled direct to Allen's Engines (vertical) and running at 350 Revs per minute

Capacity of Dynamo 130 Amperes at 105 Volts, whether continuous or alternating current cont.

Where is Dynamo fixed

In main Engine Room, on starting platform.

LAMPS.—

Is vessel wired on single or double wire system Single Total number of lights 419 arranged in the following groups:—

A 90 lights each of 16 candle power requiring a total current of 54 Amperes

B 60 lights each of — candle power requiring a total current of 36 Amperes

C 60 lights each of — candle power requiring a total current of 36 Amperes

D 82 lights each of — candle power requiring a total current of 49 Amperes

E 88 lights each of — candle power requiring a total current of 53 Amperes

F 36 lights each of — candle power requiring a total current of 22 Amperes

1 Mast head light with 1 lamps each of 32 candle power requiring a total current of 1.3 Amperes

2 Side lights with 1 lamps each of 32 (Port) 60 (Star) candle power requiring a total current of 3.6 Amperes

6 Cargo lights of 96 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 In main Engine Room having switches to groups A to F 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

Are the cut outs of non-oxidizable metal

Yes

and constructed to fuse at an excess of

100

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

DESCRIPTION OF CABLES.—

Main cable carrying 130 Amperes, comprised of 37 wires, each No. 16 legal standard wire gauge diameter

Branch cables carrying from 36 to 54 Amperes, comprised of from 7 to 19 wires, each No. 13 to 16 legal standard wire gauge diameter

Branch cables carrying — Amperes, comprised of — wires, each — legal standard wire gauge diameter

Leads to lamps 0.6 Amperes, comprised of 1 wires, each No. 18 legal standard wire gauge diameter

Cargo light cables carrying 3.6 Amperes, comprised of 7 wires, each No. 20 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



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DESCRIPTION OF INSULATION, PROTECTION, &c.—

Consisting of 2 thicknesses of vulcanized Ind. Rubber. Covered with J. R. Tape and Braided and compounded then laid in thoroughly seasoned Pine and Teak casings, and in the Engine Dept. drawn in iron pipes

Joints in cables, how made, insulated, and protected

Jointless system generally

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

Yes, where joints necessary

How are cables led throughout the ship

As above described

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

Rare in such position

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

Iron pipes

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

- do

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

- do

How are cables carried through decks

In special deck-tubes, galv.

and through bulkheads

in hard wood bushes.

Are any cables run through coal bunkers

Yes

or cargo spaces

Yes

If so, how are they protected

By Iron pipes

Are any lamps fitted in coal bunkers or spaces which may be used for cargo

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

By means of a gun metal eye secured to beam by tapped bolt.

How are the returns from the lamps connected to the hull

By brass cheese-headed Whitworth's screws 7/8"

Are all the joints with the hull in accessible positions

Yes, wherever possible.

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of

Many

hours' duration

The insulation resistance of the whole installation was not less than

ohms

The installation is

supplied with 2 voltmeters and

2 amperemeters fixed on Main Switchboard

General Remarks.—

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 SIEMENS BROTHERS & CO LIMITED.

Electrical Engineers

H. Scharma

Date January 10th 1895.

COMPASSES.—

Distance between dynamo and standard compass

over 100 feet

Distance between dynamo and steering compass

- do

The nearest cables to the compasses are as follows:—

A cable carrying	22	Ampères	30	feet from standard compass	25	feet from steering compass
A cable carrying		Ampères		feet from standard compass		feet from steering compass
A cable carrying		Ampères		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.

Builder's Signature

Date 16/1/95

Surveyor's Signature

Date 17 January 1895

THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO., LIMITED



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