

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Newcastle-on-Tyne

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No. 31201*

No. in Reg. Book. Name of Ship Johannesburg Built at Newcastle-on-Tyne When built 1895.

Electric Light Installation fitted by Clarke Chapman & Co when fitted December 1894

DESCRIPTION OF DYNAMOS AND ENGINES—

Two direct coupled engines + dynamos, engines of the tandem compound, double acting, vertical type, cylinders 5" and 9" dia + of 8" stroke developing 30 I.H.P. with from 150-180 lbs steam at 300 Revs. Dynamos of 2 pole, compound wound drum type. Capacity of Dynamos each is - 150 - Amperes at - 100 - Volts, whether continuous or alternating current continuous.

Where is Dynamo fixed

LAMPS.—

Is vessel wired on single or double wire system - Single - Total number of lights 250 arranged in the following groups:—

Group	No. of lights	Each of	Candle power	Requiring a total current of	Amperes
A	30	16	16	18	Amperes
B	80	16	16	48	Amperes
C	100	16	16	60	Amperes
D	15	16	16	10	Amperes
E	30	16	16	18	Amperes
1	Mast head light with 2 lamps each of	16	16	1.2	Amperes
2	Side light with 2 lamps each of	16	16	2.4	Amperes
4	Cargo lights of	128	128	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 as above of lights as above

Positions of other switch boards and numbers of switches on each 1 on Main Deck 3 Switches Upper Deck 1 on roof with 4 switches 1 in fore-castle with 4 1 in wheel house with 4 switches 1 on promenade deck 1 in Chart room with 5 switches 1 in Entrance to Saloon on Bridge Deck with 10 switches 1 in do for State Room lights

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 Single Wire System

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, close to switches.

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.—

Description	Amperes	Comprised of	Wires, each	Legal standard wire gauge diameter
Main cable carrying	60	19	16	legal standard wire gauge diameter
Branch cables carrying	20	7	16	legal standard wire gauge diameter
Branch cables carrying	10	4	18	legal standard wire gauge diameter
Leads to lamps	1	1	16	legal standard wire gauge diameter
Cargo light cables carrying	5			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

DESCRIPTION OF INSULATION, PROTECTION, &c.—

Conductors insulated pure india-rubber, then vulcanizing india-rubber, india-rubber coated tape & the whole vulcanized together

Joints in cables, how made, insulated, and protected At joints cables are well lapped together soldered, insulated with pure rubber, india-rubber solution & compound taping overall.

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

How are cables led throughout the ship In teak casing except in Engine Room Stakehold & tunnel where lead covered & armoured cable wire is used fixed with brass clips also in galley

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

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

What special protection has been provided for the cables near boiler casings Lead cover & armoured as above

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

How are cables carried through decks through iron tubes flanged and through bulkheads do

Are any cables run through coal bunkers no or cargo spaces Yes If so, how are they protected strong teak casing close to deck

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 large gunmetal castings secured by bolts & brass screws with washers

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions Yes

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of 6 hours' duration

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

The installation is supplied with a voltmeter and 2 an amperemeter, fixed on Switchboard

General Remarks.—

The installation is subdivided having numerous distributing boards on the various decks, name plates being attached to each switch. There are two fans for ventilating the cabins & four table fans (all electric)

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

W. Waller Electrical Engineers

Date 4 January 1895

COMPASSES.—

Distance between dynamo and standard compass 138 feet

Distance between dynamo and steering compass 144 feet

The nearest cables to the compasses are as follows:—

A cable carrying 6 Amperes 6 feet from standard compass 10 feet from steering compass

A cable carrying 1.5 Amperes 2 feet from standard compass 2 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 SIR W. B. ARMSTRONG, MITCHELL & CO. LTD

Arthur Gulston

Builder's Signature

Date

9th January 1895

J. Stoddart

Surveyor's Signature

Date

9th Jan 1895



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