

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of Belfast

Received at London Office 18

No. 4362 *

No. in
Reg. Book.

Name of Ship S.S. Sultan

Built at

Belfast

When built

Aug 1894

Electric Light Installation fitted by

W.H. Allen & Co London

when fitted

March 1894

DESCRIPTION OF DYNAMO AND ENGINE.—

W.H. Allen's compound dynamo coupled
direct to three piston twin triple expansion engine.

Capacity of Dynamo

170

Amperes at

62

Volts, whether continuous or alternating current continuous

Where is Dynamo fixed

Port side of engine room on middle platform.

LAMPS.—

Is vessel wired on single or double wire system

double

Total number of lights

140

arranged in the following groups:—

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

B 33 lights each of 16 candle power requiring a total current of 33 Amperes

C 21 lights each of 8 candle power requiring a total current of 10.5 Amperes

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

E 9 lights each of 16 candle power requiring a total current of 9 Amperes

— 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

4 } Cargo lights of 2 of 150 cp.
2 of 250 cp. 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 on bulkhead behind dynamo having switches to groups A B C D E 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

both wires being protected by fuses

Are the cut outs of non-oxidizable metal pure tin and constructed to fuse at an excess of 30 per cent over the normal current

Are all cut outs fitted in easily accessible positions

placed in passages & alcoves.

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

Shute's porcelain used for bases in all cases

DESCRIPTION OF CABLES.—

Main cable carrying 140 Amperes, comprised of 37 wires, each 16 legal standard wire gauge diameter

Branch cables carrying 33 Amperes, comprised of 19 wires, each 18 legal standard wire gauge diameter

Branch cables carrying 21 Amperes, comprised of 7 wires, each 26 legal standard wire gauge diameter

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

Cargo light cables carrying 20 Amperes, comprised of 11.5 wires, each 38 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.—

2. *encased rather* 3. *felt-tape* 4. *tinned* *hump* run through insulating solution *and casing used about ducts.* *Armoured and lead sheathed wire used in engine room*

Joints in cables, how made, insulated, and protected *Being first with cleaned and tightly braided together, are then soldered. Casing of wire then tinned off. It runs mainly, casing of pure rubber. 2 felt. 3 pure rubber. 4 eye-bite finally painted with insulating varnish.*

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

How are cables led throughout the ship *from switchboard to top of engine room where they are run forward by P & S passage in wood casing. These taken off from engine room on S side on main ducts in wood casing.*

What special protection has been provided for the cables in open alleyways *strong wood casing.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *lead sheathed & armoured wire used*

What special protection has been provided for the cables near boiler casings *armoured wire clip to bulkhead not near boiler casing.*

What special protection has been provided for the cables in engine room *Lead sheathed & armoured cables used.*

How are cables carried through decks *iron ducts tubes* and through bulkheads *fitting tubes.*

Are any cables run through coal bunkers *no* or cargo spaces *yes* If so, how are they protected *strong wood casing run at side of ship close to ducts.*

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

If so, how are they specially protected *strong cast iron ducts fittings*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *W. H. Allen cargo complex.*

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 _____ ohms

The installation is *Cambria's meter* supplied with a voltmeter and _____ an amperemeter, fixed *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 W. H. ALLEN & CO.

C.C.#

Electrical Engineers

Date *April 19th 94.*

COMPASSES.—

Distance between dynamo and standard compass *108 ft.*

Distance between dynamo and steering compass *96 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *1* Amperes *12* feet from standard compass *2* feet from steering compass

A cable carrying *2* Amperes *9* feet from standard compass *4* 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.

Builder's Signature

Date

A. L. Jones

Surveyor's Signature

Date

25th April 1894



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