

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 480

Port of *Belfast* Date of First Survey *7th Mar* Date of Last Survey *31st May* No. of Visits *8*
 No. in Reg. Book on the ~~Iron~~ or Steel *Iron S.S. "Saas Maru"* Port belonging to *Tokio*
 Built at *Belfast* By whom *Wm Ruan Clark & Co Ltd* When built *1898*
 Owners *Nippon Yusen Kaisha* Owners' Address *Tokio*
 Yard No. *144* Electric Light Installation fitted by *Messrs W. H. Allen & Co* When fitted *1898*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 of Messrs W. H. Allen & Co's Patent compound dynamos coupled direct each to compound vertical type double acting engines.

Each Capacity of Dynamo *290* Amperes at *80* Volts, whether continuous or alternating current *continuous*

Where is Dynamo fixed *between main engine thrust blocks at entrance to tunnels*

Position of Main Switch Board *middle platform in engine room having switches to groups A B C D E F G H I J of lights, &c., as below*

Positions of auxiliary switch boards and numbers of switches on each *at forward end of Port alleyway is placed a box containing 6 switches controlling the lights in holds*

If cut outs are fitted on main switch board to the cables of main circuit *yes* and on each auxiliary switch board to the cables of auxiliary circuits *yes* and at each position where a cable is branched or reduced in size *yes* and to each lamp circuit *yes*

If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits *yes*

Are the cut outs of non-oxidizable metal *pure tin and tin and copper on main switchboard* 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* Are the fuses of standard dimensions *yes* If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit *yes*

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases *on slate or porcelain*

Total number of lights provided for *286* arranged in the following groups:—

A	<i>29</i>	lights each of <i>268/16</i>	<i>3 of 32</i>	candle power requiring a total current of <i>22.4</i>	Amperes
B	<i>14</i>	lights each of <i>50</i>		candle power requiring a total current of <i>30.8</i>	Amperes
C	<i>48</i>	lights each of <i>16</i>		candle power requiring a total current of <i>33.6</i>	Amperes
D	<i>53</i>	lights each of <i>16</i>		candle power requiring a total current of <i>37.1</i>	Amperes
E	<i>46</i>	lights each of <i>16</i>		candle power requiring a total current of <i>32.2</i>	Amperes
	<i>1</i>	Mast head light with <i>1</i> lamps each of <i>32</i>		candle power requiring a total current of <i>1.4</i>	Amperes
	<i>2</i>	Side light with <i>1</i> lamps each of <i>32</i>		candle power requiring a total current of <i>2.8</i>	Amperes
	<i>10</i>	Cargo lights of <i>200</i>		candle power, whether incandescent or arc lights <i>incandescent</i>	

If arc lights, what protection is provided against fire, sparks, &c. *glass shade carried in iron frame*

Where are the switches controlling the masthead and side lights placed *In Forecastle placed in teak-wood box*

DESCRIPTION OF CABLES.

Main cable carrying *290* Amperes, comprised of *37* wires, each *12* L.S.G. diameter, *.3217* square inches total section

Branch cables carrying *52.8* Amperes, comprised of *19* wires, each *16* L.S.G. diameter, *.0624* square inches total sectional area

Branch cables carrying *33.6* Amperes, comprised of *19* wires, each *18* L.S.G. diameter, *.0849* square inches total sectional area

Leads to lamps carrying *7* Amperes, comprised of *1* wires, each *16* L.S.G. diameter, *.0032* square inches total sectional area

Cargo light cables carrying *8.8* Amperes, comprised of *145* wires, each *38* L.S.G. diameter, *.0041* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables are insulated with *pure Paraffin Vulcanising Rubber India Rubber Proofed Tape* the whole being *oiled together and finally braided and compounded*

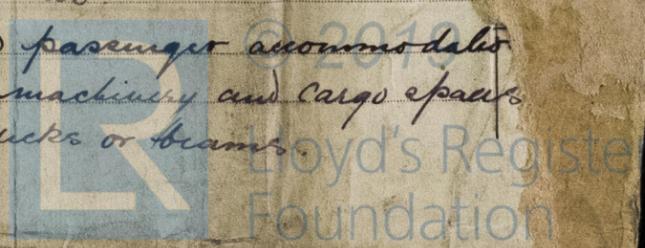
Joints in cables, how made, insulated, and protected *The joints are all well soldered and re-insulated with pure Para Rubber Oysterite Tape Felt Tape and finally coated with insulating varnish*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *yes* Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage *There are a few joints in cargo spaces these being made in C.I. junction boxes*

Are there any joints in or branches from the cable leading from dynamo to main switch-board *no*

How are the cables led through the ship, and how protected *The cables in crew and passenger accommodations are carried in wood casing attached to decks, and those in machinery and cargo spaces armoured or lead sheathed and armoured cables clipped to decks or beams*

J. S. Canal Plant - comprising Propeller and central Rev. Pump
 G. 16 lights each of 50
 H. 244
 I. 40
 J. 16
 35.2
 52.8
 28.0
 Amperes



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *These are cables in the holds which are not accessible when the ship is loaded.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *armoured cables used and carried in g.i. pipes.*

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

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

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

Cables carried through beams *holes being bushed with fibre through bulkheads, &c. bulkhead nipples*

Cables carried through decks *galvanized iron duct tubes bushed with fibre and watertight*

Do any cables run through coal bunkers *yes* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

How are they protected *in bunkers armoured cables are run in g.i. pipes and are clipped to deck in cargo spaces*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *yes*

If so, how are the lamp fittings and cable terminals specially protected *cast iron fittings with strong c.i. covers*

Where are the main switches and cut outs for these lights fitted *on switchboard in engine room.*

If in the spaces, how are they specially protected *c.i. fittings as in bunkers.*

Are any switches or cut outs fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *c.i. connection boxes*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel _____

Are the returns from the lamps connected to the hull _____

Are all the joints with the hull in accessible positions _____

VESSELS BUILT FOR CARRYING PETROLEUM.

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 _____

Are any switches, cut outs, or joints of cables fitted in the pump room or companion _____

How are the lamps specially protected in places liable to the accumulation of vapour or gas _____

The installation is *supplied* supplied with a voltmeter and *2* amperemeters *fixed on main switchboard* voltmeter *fixed close to dynamo*

The copper used is guaranteed to have a conductivity of *100* 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.

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, SON & Compy** *J. H. Kempster* Electrical Engineers Date *June 3rd 1898*

COMPASSES.

Distance between dynamo or electric motors and standard compass *101 feet*

Distance between dynamo or electric motors and steering compass *98 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>2.8</i>	Amperes	<i>8</i>	feet from standard compass	<i>2</i>	feet from steering compass
A cable carrying	<i>1.4</i>	Amperes	<i>16</i>	feet from standard compass	<i>12</i>	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.

PRO WORKMAN, CLARK & CO., LIMITED. *J. H. Kempster* SECRETARY Builder's Signature. Date *7th June 1898*

GENERAL REMARKS.

A. L. Jones
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *This installation appears to be fitted in accordance with the Rules.*

S. J. S. A. N. Lloyd's Register of British and Foreign Shipping
13/6/98

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

BELLER-0110