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W495-0087 1/3

are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit.....Yes

Containing 8 switches in 150 volt Room, 1 Box in
in Entrance Ford. Bridge Deck one containing 10 switches and the other 6 switches 2 Boxes in

Trance, Mid House Bridge Deck, one containing 8 switches and the other containing
switches, 1 Box in Port Passage Ford, Upper Deck containing 12 switches, 2 Boxes
Star. Passage Ford, Upper Deck, each containing 12 switches, and 1 Box in Entrance
Stores containing 10 switches.

Are all cut outs fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used

Instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit Yes

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6859.

Port of Belfast Date of First Survey June 18th Date of Last Survey Oct. 22nd No. of Visits 16
 No. in on the Iron Steel AB. Lucas Wheelhouse belonging to Liverpool
 Reg. Book Built at Belfast By whom Harland & Wolff When built 1910
 Owners Birkenhead P. & Co. Ltd. Owners' Address Liverpool
 Yard No. 411 Electric Light Installation fitted by Harland & Wolff When fitted 1910

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Enclosed Forced Lubrication Engines & Dynamos Cylinders 9" x 12" dia. x 5" stroke, giving an output of 42 K.W. at 525 revs. per min.

Capacity of Dynamo 420 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Engine Room Whether single or double wire system is used Single

Position of Main Switch Board Engine Room having switches to groups A, B, C, D, E, F, G & H, of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 C.S. Box containing 10 switches in Engine Room, 1 C.S. Box containing 8 switches in Boiler Room, 1 Box on Navigating Bridge containing 15 switches, 2 Boxes in Entrance Ford. Bridge Deck, containing 10 switches and the other 6 switches 2 Boxes in

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 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 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 Yes

Total number of lights provided for 685 ^{Note: (Morse Lamp not included)} arranged in the following groups:—

A Passenger Port 164 lights each of 16 C.P. & 6 of 8 candle power requiring a total current of 64.7 Amperes

B Star 140 lights each of 16 C.P. & 10 of 8 candle power requiring a total current of 56.3 Amperes

C Machinery Spaces 85 lights each of 16 candle power requiring a total current of 51.0 Amperes

D Captain & Signals 22 lights each of 16 C.P. 4 of 32 C.P. &c. candle power requiring a total current of 25.6 Amperes

E Engineers & Personnel 34 lights each of 16 candle power requiring a total current of 13.5 Amperes

2 Mast head light with 2 lamps each of 32 candle power requiring a total current of 2.4 Amperes

2 Side light with 2 lamps each of 32 candle power requiring a total current of 2.4 Amperes

6 Cargo lights of 4 lights each & 3 arcs candle power, whether incandescent or arc lights both

If arc lights, what protection is provided against fire, sparks, &c. by glass globes around arcs.

Where are the switches controlling the masthead and side lights placed in Switch & Fuse Box in wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying 64.7 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, .0944 square inches total sectional area

Branch cables carrying 19.7 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0539 square inches total sectional area

Branch cables carrying 20 Amperes, comprised of 7 wires, each 16 L.S.G. diameter, .0222 square inches total sectional area

Leads to lamps carrying 2.82 Amperes, comprised of 7 wires, each 22 L.S.G. diameter, .00426 square inches total sectional area

Cargo light cables carrying 2.4 Amperes, comprised of 90 wires, each 36 L.S.G. diameter, .00407 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

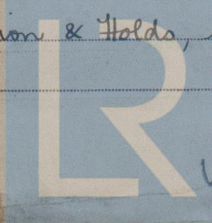
Cables throughout decks of 2500 megohm classed to C.M.A. quality insulated with pure rubber and vulcanised rubber, braided and compounded overall. Cables in Engine & Boiler Rooms and galleys further protected by steel armouring.

Joints in cables, how made, insulated, and protected Soldered using resin as flux, insulated with pure rubber and prepared kapes, and protected by strong wood casing in Accommodation and Holds which is further protected in Holds by J. S. Sheeting.

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 Yes, all joints properly protected.

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 Strong wood casing in Accommodation & Holds, which is protected in Holds and Cargo Spaces by J. S. Sheeting.



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture pipings

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered & Steel armoured

What special protection has been provided for the cables near boiler casings Lead covered & Steel armoured

What special protection has been provided for the cables in engine room Lead covered & Steel armoured

How are cables carried through beams beams bushed with fibre through bulkheads, &c. in glands if W.I. otherwise bushed with fibre

How are cables carried through decks in Iron Deck Tubes bushed with fibre

Are any cables run through coal bunkers No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected strong wood casing, further protected by l. S. sheeking

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

If so, how are the lamp fittings and cable terminals specially protected in strong steel bronzed pendants

Where are the main switches and cut outs for these lights fitted at Stairway Entrance leading to same

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers No

Cargo light cables, whether portable or permanently fixed permanently How fixed in casing

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel thru' terminal bolted to Dynamo baseplate

How are the returns from the lamps connected to the hull sweated to 3/8" dia. tinned brass tap screws to beams etc

Are all the joints with the hull in accessible positions Yes

The installation is supplied with a voltmeter and an amperemeter, fixed main Switch board

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 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 2500 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 Harland & Wolff Ltd Electrical Engineers

Date

COMPASSES.

Distance between dynamo or electric motors and standard compass 40' to nearest motor

Distance between dynamo or electric motors and steering compass 80' " " "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>60</u>	Amperes	<u>50</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>26.6</u>	Amperes	<u>50</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>3</u>	Amperes	<u>50</u>	feet from standard compass	<u>10</u>	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 nil degrees on all courses in the case of the standard compass and nil degrees on all courses in the case of the steering compass.

For Harland & Wolff Ltd Builder's Signature.

Date

12th Nov 1910

GENERAL REMARKS.

This installation is of good description, and has been fitted in accordance with the Rules.

It is submitted that this vessel is eligible for THE RECORD Elec. light

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.