

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7505.

Port of *Belfast* Date of First Survey *10th Nov 1910* Date of Last Survey *6th Feb 1915* No. of Visits *13*
 No. in Reg. Book *on the Iron or Steel S.S. Carmarthen* belonging to *Belfast*
 Built at *Belfast* By whom *Wickman Clark & Co. Ltd.* When built *1915*
 Owners *Royal Mail S. P. Coy* Owners' Address *London*
 Yard No. *336* Electric Light Installation fitted by *Sunderland Forge & Coy. Ltd.* When fitted *1915*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Generating Plants fitted consisting of Open-type, compound Steam Engines, direct coupled to compound wound multipolar dynamos fitted on combined bedplates.
 Capacity of Dynamo *318* Amperes at *110* Volts, whether continuous or alternating current *Continuous* ✓
 Where is Dynamo fired *In Engine Room.*
 Position of Main Switch Board *In Engine Room* having switches to groups *10* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each
One in Chart room for Navigation Lights. 12 Switches
 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 *—*
 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 *50.9* arranged in the following groups:—

A	104	lights each of	16	candle power requiring a total current of	25	Amperes
B	80	" " "	"	" " " " " " "	22	"
C	40	lights each of	"	candle power requiring a total current of	10	Amperes
D	60	" " "	"	" " " " " " "	15	"
E	87	lights each of	"	candle power requiring a total current of	20	Amperes
F	8	" " "	"	" " " " " " "	2	"
G	42	lights each of	"	candle power requiring a total current of	10	Amperes
H	6 arcs x 48	" " "	"	" " " " " " "	84	"
I	6 " x 40	lights each of	"	candle power requiring a total current of	80	Amperes
K	<i>Wireless Telegraphy</i>			" " " " " " "	27	"
2	Mast head light with 1 lamps each of	32		candle power requiring a total current of	2	Amperes
2	Side light with 1 lamps each of	32		candle power requiring a total current of	2	Amperes
12 arc lamps x 44	Cargo lights of	32		candle power, whether incandescent or arc lights.	<i>Both Fitted</i>	

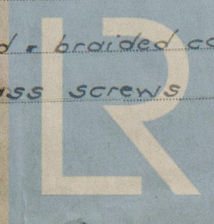
 If arc lights, what protection is provided against fire, sparks, &c. *Glass globes, strong galvanised iron guards & ash trays fitted.*
 Where are the switches controlling the masthead and side lights placed *In chart room.*

DESCRIPTION OF CABLES.

Main cable carrying *318* Amperes, comprised of *61* wires, each *12* L.S.G. diameter, *0.500* square inches total sectional area
 Branch cables carrying *84* Amperes, comprised of *19* wires, each *14* L.S.G. diameter, *0.0937* square inches total sectional area
 Branch cables carrying *25* Amperes, comprised of *7* wires, each *16* L.S.G. diameter, *0.0221* square inches total sectional area
 Leads to lamps carrying *2* Amperes, comprised of *7* wires, each *25* L.S.G. diameter, *0.0022* square inches total sectional area
 Cargo light cables carrying *10* Amperes, comprised of *114* wires, each *38* L.S.G. diameter, *0.003192* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors, insulated with pure & vulcanised India rubber taped & the whole vulcanised together & finished as follows:— In Accommodation—Lead covered & braided overall
 In Engine room, holds &c. & where exposed to weather—Lead covered, armoured & braided.
 Joints in cables, how made, insulated, and protected
No joints
 Are all the joints of cables thoroughly soldered, resin only having been used as a flux *—* 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 *—*
 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 *Lead covered, armoured & braided cables securely fastened to beams &c with galvanised iron clips & 3/8" dia. brass screws*



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
Cables lead covered, armoured & braided overall.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, arm^d & braided

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

How are cables carried through beams Through holes bushed w/ fibre through bulkheads, &c. Through w.t. brass glands

How are cables carried through decks Through deck tubes made water tight

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead covered, armoured & braided

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 Glass globe & strong brass guard fitted

Where are the main switches and cut outs for these lights fitted In Engine Room

If in the spaces, how are they specially protected —

Are any switches or cut outs fitted in bunkers No Attached to heavy brass

Cargo light cables, whether portable or permanently fixed Portable How fixed water tight plugs & sockets

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Sweated into heavy brass sockets & bolted to beam in engine room

How are the returns from the lamps connected to the hull Sweated to brass washers connected to hull by 3/8" brass screws

Are all the joints with the hull in accessible positions Yes

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 Yes supplied with a voltmeter and Yes an amperemeter, fixed in engine room

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.

H. Wight

Electrical Engineers

Date March 5, 1915

COMPASSES.

Distance between dynamo or electric motors and standard compass 112 ft

Distance between dynamo or electric motors and steering compass 108 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>5.8</u>	<u>14</u>	<u>12</u>	<u>12</u>
<u>0.5</u>	<u>3</u>	<u>3</u>	<u>3</u>
<u>1.0</u>	<u>6</u>	<u>8</u>	<u>8</u>

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 course in the case of the standard compass and Nil degrees on all course in the case of the steering compass.

PRO WORKMAN LARK & CO., LIMITED

Builder's Signature.

Date

GENERAL REMARKS.

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

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

15/3/15

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

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.