

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6682.

Port of *Belfast* Date of First Survey *Aug 24* Date of Last Survey *Oct 5* No. of Visits *13*
 No. in Reg. Book *on the Iron or Steel* *KB. L. 200 of Canada* Port belonging to *Belfast*
 Built at *Belfast* By whom *Markman, Clark & Co. Ltd.* When built *1909*
 Owners *L. & N. Ltd. Ltd.* Owners' Address *London*
 Yard No. *283* Electric Light Installation fitted by *M^{rs} H. & W. L. Glasgow* fitted *1909*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine of the single cylinder vertical open type, with crankshaft throttle governor, direct coupled to compound wound multipolar dynamo.

Capacity of Dynamo *165* Amperes at *100* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *In Thrust Recess, Engine Room.*

Position of Main Switch Board *Near Dynamo* having switches to groups *Four* in number of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *(1) Saloon Passage 6 way, (2) Saloon Pantry 9 way, (3) Steering Engine Platform 9 way, (4) (4A) Engine Room, Sub-Dist. Boards:— (5) Forecastle 6 way, (6) Wheel House 9 way, (7) Aft Deck House 6 way, (8) Refrig. Engine Rm. 6 way.*

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, fine tin* and constructed to fuse at an excess of *50 to 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, all bases of porcelain.*

Total number of lights provided for *223 - 16 c.p.* arranged in the following groups:—

A	<i>47</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>26</i>	Amperes
B	<i>50</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>28</i>	Amperes
C	<i>55</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>31</i>	Amperes
D	<i>40</i>	lights each of	<i>16</i>	candle power requiring a total current of	<i>39</i>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
<i>2</i>	Mast head lights with	<i>2</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>1.1</i> Amperes
<i>2</i>	Side lights with	<i>2</i>	lamps each of	<i>32</i>	candle power requiring a total current of	<i>1.1</i> Amperes
<i>10</i>	Cargo lights of	<i>5 - 16</i>		candle power, whether incandescent or arc lights	<i>incandescent.</i>	

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed *Fore Mast & Sidelights, in Wheel House on Bridge; Main Mast, in Wheel House Aft.*

DESCRIPTION OF CABLES.

Main cable carrying	<i>127</i>	Amperes, comprised of	<i>37</i>	wires, each	<i>14</i>	L.S.G. diameter,	<i>.182</i>	square inches total sectional area
Branch cables carrying	<i>32</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>14</i>	L.S.G. diameter,	<i>.034</i>	square inches total sectional area
Branch cables carrying	<i>26</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>15</i>	L.S.G. diameter,	<i>.028</i>	square inches total sectional area
Leads to lamps carrying	<i>3</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>16</i>	L.S.G. diameter,	<i>.003</i>	square inches total sectional area
Cargo light cables carrying	<i>3</i>	Amperes, comprised of	<i>145</i>	wires, each	<i>38</i>	L.S.G. diameter,	<i>.004</i>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of high conductivity tinned copper, insulated with pure and vulcanised rubber and taped. In Accommodation, braided & compounded overall; in Tween Decks & Eng. Rms., lead covered, jute padded, armoured with gal. iron wires.

Joints in cables, how made, insulated, and protected *Braided, and compounded overall.*

Joints in wires & cables entirely dispensed with, metal junction boxes with porcelain interiors being used throughout.

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 *None.*

Are there any joints in or branches from the cable leading from dynamo to main switch board *None.*

How are the cables led through the ship, and how protected *Cables led through beams and clipped to decks and bulkheads in Tween decks and engine rooms; protected by lead covering armouring with gal. iron wire, and braided & compounded overall. All wiring in accommodation v. i. r. run in wood casing.*

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *All cables and wood casings exposed & accessible.*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *cables lead covered, padded, armoured and braided & compounded.*
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *L.C. Arm. & Braided.*
 What special protection has been provided for the cables near boiler casings *Lead Covered Armoured & Braided*
 What special protection has been provided for the cables in engine room *" " " " " "*
 How are cables carried through beams *through teak bushes* through bulkheads, &c. *screwed watertight gland*
 How are cables carried through decks *gal. iron deck tubes flanged to deck & made watertight.*
 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 *Lead covered padded, armoured, braided and compounded.*
 Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *None.*
 If so, how are the lamp fittings and cable terminals specially protected *—*
 Where are the main switches and cut outs for these lights fitted *—*
 If in the spaces, how are they specially protected *—*
 Are any switches or cut outs fitted in bunkers *None.*
 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 *—*
 How 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 with a voltmeter and *—* an amperemeter, fixed *on Main Switchboard*
 The copper used is guaranteed to have a conductivity of *98* 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.

WILLIAM HARRIE & CO. LIMITED.

W. H. Harrie

Electrical Engineers

Date *11th Oct. 1909.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *—*
 Distance between dynamo or electric motors and steering compass *—*
 The nearest cables to the compasses are as follows:—
 A cable carrying *3* Amperes *led into base of* standard compass *—* feet from steering compass
 A cable carrying *—* Amperes *—* feet from standard compass *—* 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 *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 *—* degrees on *—* course in the case of the steering compass.

PREWORKMAN, CLARK & CO. LIMITED.

P. F. Preman

Builder's Signature.

Date *19th Dec. 1909*

GENERAL REMARKS.

This installation appears to be of good description and has been fitted in accordance with the Rules.

P. F. Preman

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

Committee's Minute

REPORT FORM No. 13.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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