

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4869

Port of Belfast Date of First Survey April 4th Date of Last Survey 15th June No. of Visits 8
 No. in Reg. Book on the Iron or Steel Screw Steamer "Beacon Grange" Port belonging to London
 Built at Belfast By whom Messrs Wm Ruman, Clerk & Co When built 1898
 Owners Messrs Howland Bros & Co Owners' Address 146 Leadenhall St. E.C.
 Yard No. 146 Electric Light Installation fitted by The Globe Electric Co. When fitted 1898

DESCRIPTION OF DYNAMO, ENGINE, ETC. Open fronted vertical Engine, double acting, Cylinders coupled direct on same bedplate to Antwerp Dynamo, compound wound & with Gramme Armature
 Capacity of Dynamo 400 Amperes at 65 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine starting platform
 Position of Main Switch Board 2 feet from Engine stop valve having switches to 4200 five circuits of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Saloon pantry one with 3 switches, one in Wheelhouse with 10 switches, one on Engine room top platform with 5 switches. Every circuit has a separate return to switchboard.
 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 Special tin and constructed to fuse at an excess of 25% 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 given to engineer
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases plate or porcelain
 Total number of lights provided for 290 arranged in the following groups:—
 A Engine 40 lights each of Sixteen candle power requiring a total current of 40 Amperes
 B Saloon 40 lights each of " candle power requiring a total current of 40 Amperes
 C amidships 50 lights each of " candle power requiring a total current of 50 Amperes
 D Fore ship 48 lights each of " candle power requiring a total current of 48 Amperes
 E After ship 30 lights each of " candle power requiring a total current of 30 Amperes
 One Mast head light with one lamp each of sixteen candle power requiring a total current of 1 Amperes
 Two Side light with one lamp each of 16 + 32 candle power requiring a total current of 3 Amperes
 Six Cargo lights of 8 lamps of 16 candle power, whether incandescent or arc lights 48
 3 arc lamps of 10 Amperes each 30
 If arc lights, what protection is provided against fire, sparks, &c. a strong opaque globe closed at bottom & wired 290

Where are the switches controlling the masthead and side lights placed In wheelhouse of lower bridge

DESCRIPTION OF CABLES.

Main cable carrying 300 Amperes, comprised of 37 wires, each No 12 L.S.G. diameter, .3221 square inches total sectional area
 Branch cables carrying 60 Amperes, comprised of 19 wires, each " 16 L.S.G. diameter, .0624 square inches total sectional area
 Branch cables carrying 30 Amperes, comprised of 7 wires, each " 14 L.S.G. diameter, .0358 square inches total sectional area
 Leads to lamps carrying 1 Amperes, comprised of 1 wires, each " 18 L.S.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 8 Amperes, comprised of 290 wires, each " 38 L.S.G. diameter, .0085 square inches total sectional area
 Arc lamp cables 10 " " 440 " " 38 " " .0128

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All wires & cables tinned double cotton covered 3 layers pure & vulcanizing rubber, one tape, the whole vulcanized together then braided & oiled. In Engine room lead covered & again braided & compounded, in exposed places protected with steel armour.
 Joints in cables, how made, insulated, and protected all soldered with resin covered with pure rubber strip, rubber solution & prepared tape up to original thickness

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 joints all easy to get at

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 all above deck none in cargo space or bunkers & all in casing excepting the forward & after mains which are led along under the main rail in iron gas pipes.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places alwys accessible yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered & braided & casing covered with sheet steel No 18 s.w.g

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat There are no cables in hot places

What special protection has been provided for the cables near boiler casings Lead covered braided & drawn through iron pipes

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

How are cables carried through beams Hard wood ferrules through bulkheads, &c. Brass stuffing boxes

How are cables carried through decks Iron gas pipes jointed on to deck with flange pipe extending 18" above deck

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

If so, how are they protected Lead covered cables braided in casings & sheathed over with steel

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage 16 Lamps under bridge deck

If so, how are the lamp fittings and cable terminals specially protected Special cast iron water tight fittings with shut up iron doors

Where are the main switches and cut outs for these lights fitted Engine room top platform in lock up case

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 portable How fixed Brass screwed sockets

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 Double wire supplied with a voltmeter and Volt & Ammeter an amperemeter, fixed Main switchboard

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 2,000 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.

McGowan & Co Electrical Engineers Date 30 June 1898
Manager

COMPASSES.

Distance between dynamo or electric motors and standard compass 300 feet

Distance between dynamo or electric motors and steering compass 300 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>20</u>	Amperes	<u>30</u>	feet from standard compass	<u>20</u>	feet from steering compass
A cable carrying	<u>7</u>	Amperes	<u>7</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>1</u>	Amperes	<u>12</u>	feet from standard compass	<u>9 inches</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 _____ 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.

W. H. Beckett Builder's Signature. Date 1st July 1898
Secretary

GENERAL REMARKS.

The installation is on the double wire system & the compasses when being adjusted on the head trip were found not to be affected by the current.

A. L. Jones

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

Committee's Minute

This installation appears to be in accordance with the Rules

50 sh
5 sh



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN

REPORT FOR THE YEAR 1898