

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No 44168

Port of Newcastle Date of First Survey Sep 5 '02 Date of Last Survey Sep 12 '02 No. of Visits 6
 No. in Reg. Book on the Iron or Steel s/s Gracchus Port belonging to Melbourne
 Built at Jarrow By whom Palmers & Co. Ltd When built 1902
 Owners Archibald Burns & Co. Owners' Address Melbourne
 Yard No. 756 Electric Light Installation fitted by J. H. Holmes & Co. When fitted 1902

DESCRIPTION OF DYNAMO, ENGINE, ETC.

On 7 1/2" x 7" open type Engine with Auto expansion Governor
Coupled to the "Castle" Dynamo

Capacity of Dynamo 185 Amperes at 60 Volts, whether continuous or alternating current

Where is Dynamo fixed on starboard side of the Starting Platform in Engine Room

Position of Main Switch Board near Dynamo having switches to groups A B C D E F of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each fixed in paucy with 12 S.P. switches & 13 S.P. fuses. B fixed on Engine Room Casing with 6 S.P. switches. C fixed on Eng Room Casing with 6 S.P. switches. D fixed on Starting Platform with 6 S.P. switches. E fixed on Engine casing with 4 S.P. fuses. F fixed on Eng Room casing with 2 S.P. fuses

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 Single wire system and 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 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 Porcelain on slate

Total number of lights provided for 62 arranged in the following groups:—

A	<u>62</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>62</u>	Amperes
B	<u>24</u>	lights each of	<u>"</u>	candle power requiring a total current of	<u>24</u>	Amperes
C	<u>26</u>	lights each of	<u>"</u>	candle power requiring a total current of	<u>26</u>	Amperes
D	<u>22</u>	lights each of	<u>"</u>	candle power requiring a total current of	<u>22</u>	Amperes
E	<u>24</u>	lights each of	<u>"</u>	candle power requiring a total current of	<u>24</u>	Amperes
F	<u>20</u>	lights each of	<u>"</u>	candle power requiring a total current of	<u>20</u>	Amperes
<u>2</u>	Mast head lights with	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
<u>2</u>	Side light with	<u>1</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
<u>4</u>	Cargo lights of	<u>6 x 16</u>	candle power, whether incandescent or arc lights			

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

Where are the switches controlling the masthead and side lights placed in the Wheel House

DESCRIPTION OF CABLES.

Main cable carrying 62 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0612 square inches total sectional area
 Branch cables carrying 24 Amperes, comprised of 7 wires, each 15 L.S.G. diameter, .0285 square inches total sectional area
 Branch cables carrying 26 Amperes, comprised of 7 wires, each 15 L.S.G. diameter, .0285 square inches total sectional area
 Leads to lamps carrying 1 Amperes, comprised of 7 wires, each 2 1/2 L.S.G. diameter, .0049 square inches total sectional area
 Cargo light cables carrying 6 Amperes, comprised of 7 wires, each 20 L.S.G. diameter, .0071 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables are insulated with pure rubber vulcanized, taped, braided & compounded
& further protected by lead & iron sheathing wherever necessary

Joints in cables, how made, insulated, and protected Carefully Cleaned, twisted & soldered & insulated with Mawson tape, very few joints made in the Installation, wires looped whenever practicable

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 now

Are there any joints in or branches from the cable leading from dynamo to main switch board now

How are the cables led through the ship, and how protected in Twin Deck lead covered wires neatly clipped with Bears saddles to Gull Bottom, Engine Room. Armored wires clipped to B.H. in Cabin or V. rubber cables in wood casing

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 Lead covered or in iron piping when necessary

What special protection has been provided for the cables near galley or oil lamps or other sources of heat Armoured wires

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

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

How are cables carried through beams bushed with fibre through bulkheads, &c. Stuffing Boxes

How are cables carried through decks in lead or iron tubes, flanged & made watertight

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

If so, how are they protected "

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

If so, how are the lamp fittings and cable terminals specially protected Strong C.I. W.T. fittings with hinged covers

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

If in the spaces, how are they specially protected "

Are any switches or cut outs fitted in bunkers now

Cargo light cables, whether portable or permanently fixed Portable How fixed sockets in C.I. Boxes

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Suitable brass socket fixed with 1/2" brass bolts

How are the returns from the lamps connected to the hull The wires are bundled between 2 washers fixed with 3/8" R.H.D. 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 not supplied with a voltmeter and not an amperemeter, fixed on Main S.W. Bd.

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.

J. W. Holmes & Co.

Electrical Engineers

Date Sept 10. 02.

COMPASSES.

Distance between dynamo or electric motors and standard compass about 100 feet

Distance between dynamo or electric motors and steering compass 90 -

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>72</u>	<u>25</u>	<u>20</u>	
<u>62</u>	<u>20</u>	<u>4</u>	

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.

S. L. Laddell

Builder's Signature.

Date 16 Sept. 1902

GENERAL REMARKS.

This installation as far as could be seen refitted in accordance with the Rule requirements.

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

Committee's Minute

It is submitted that this installation appears to be satisfactory.

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.