

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 64705

Port of Liverpool Date of First Survey 24 May Date of Last Survey 14<sup>th</sup> June 1910 No. of Visits 5  
 No. in 1352 on the Iron Steel T.S.S. Inae-fell Port belonging to Douglas  
 Reg. Book 1352 Built at Tranmere Shipyard, Birkenhead By whom Messrs Cammell Laird & Co When built 1910  
 Owners Isle of Man Steam Packet Co. Owners' Address Douglas, Isle of Man  
 Yard No. 330 Electric Light Installation fitted by Cammell Laird & Co. Ltd. When fitted 1910

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine. Single Cylinder enclosed engine by W.H. Allen & Sons Bedford  
 Generator Multipolar type by W.H. Allen & Sons Bedford  
 Capacity of Dynamo 180 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Fore Port Side in Engine Room Whether single or double wire system is used Double  
 Position of Main Switch Board Fore Port Side in Engine Room having switches to groups 7 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each none

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 cessel 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 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 Yes

Total number of lights provided for 293 arranged in the following groups:—

A	49	lights each of	16	candle power requiring a total current of	27.5	Amperes
B	60	lights each of	16	candle power requiring a total current of	40.0	Amperes
C	73	lights each of	16 & 32	candle power requiring a total current of	45.36	Amperes
D	75	lights each of	16 & 32	candle power requiring a total current of	42.5	Amperes
E	21	lights each of	16	candle power requiring a total current of	11.75	Amperes
F	15	lights each of	16 & 32	candle power requiring a total current of	11.50	Amperes
G	one grill taking 20 amps.					
2	Mast head light with	2	lamps each of	32	candle power requiring a total current of	2.25
2	Side light with	2	lamps each of	32	candle power requiring a total current of	2.25
2	Clusters	lights of	6 lights, each of	16	candle power, whether incandescent or arc lights	Incandescent

If arc lights, what protection is provided against fire, sparks, &c. no arc lights fitted

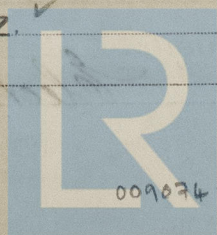
Where are the switches controlling the masthead and side lights placed In wheel house

## DESCRIPTION OF CABLES.

Main cable carrying 180 Amperes, comprised of 37 wires, each 14 L.S.G. diameter, .1824 square inches total sectional area  
 Branch cables carrying 40 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 115 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .01246 square inches total sectional area  
 Leads to lamps carrying 36 Amperes, comprised of 1 wire, each 18 L.S.G. diameter, .00181 square inches total sectional area  
 Cargo light cables carrying 336 Amperes, comprised of 108 wires, each 38 L.S.G. diameter, .00305 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

600 megohm taped & braided cable in accommodation, and lead covered & armoured in machinery spaces. Wires on open deck run in galvanized solid drawn steel tubing  
 Joints in cables, how made, insulated, and protected None  
 Are all the joints of cables thoroughly soldered, resin only having been used as a filler 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  
 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 In wood casing



© 2020

Lloyd's Register Foundation

009074-009082-0079



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 *Run in teak wood casing or galvanized solid drawn steel tubing* ✓

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armoured cable or in steel tubing* ✓

What special protection has been provided for the cables near boiler casings *They are lead covered & armoured* ✓

What special protection has been provided for the cables in engine room *They are lead covered & armoured* ✓

How are cables carried through beams *Thro' vulcanized fibre bushes* through bulkheads, &c. in h.T. glands ✓

How are cables carried through decks *In deck tubes lined with vulcanized 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 *They are run in galvanized solid drawn steel tubing* ✓

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

If so, how are the lamp fittings and cable terminals specially protected *Cast iron hinged cover to fittings* ✓

Where are the main switches and cut outs for these lights fitted *In passages on deck above* ✓

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 to clusters* 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 \_\_\_\_\_

The installation is *Yes* supplied with a voltmeter and *yes* an amperemeter, fixed *on 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 *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* 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 Gammell Laird and Company Limited

*John McEovern* Electrical Engineers Date \_\_\_\_\_

COMPASSES.

Distance between dynamo or electric motors and standard compass *86 feet*

Distance between dynamo or electric motors and steering compass *80 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>11</i>	Ampères	<i>6</i>	feet from standard compass	<i>4</i>	feet from steering compass
A cable carrying		Ampères		feet from standard compass		feet from steering compass
A cable carrying		Ampères		feet from standard compass		feet from steering compass

*Each instrument is lit by electric light the wires running up pedestal*

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.

For Gammell Laird and Company Limited

*John McEovern* Builder's Signature. Date *27 August 1910*

GENERAL REMARKS. *This installation has been fitted under survey. The materials and workmanship are good. On completion it was tried at work satisfactorily*

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

*R. D. Shilston.*

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

Committee's Minute

LIVERPOOL 6 SEP 1910

*Electric Light.*



© 2020

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.