

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5236

Port of MIDDLESBROUGH Date of First Survey 14<sup>th</sup> Aug Date of Last Survey 10<sup>th</sup> Sept No. of Visits 6  
 No. in Reg. Book on the Iron or Steel S.S. "Inessa Bonel" Port belonging to Messrs Hukins & Sons  
 Built at Middlesbrough By whom Messrs Hukins & Sons When built 1907  
 Owners F. & H. Powell & Co Owners' Address Liverpool  
 Yard No. 170 Electric Light Installation fitted by Messrs J. H. Hukins & Co. When fitted 1907

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

5" x 4" Open type to work at 80 lbs pressure + coupled to 9 3/4 x 5 1/4 Castle dynamo compound wound 400 Revs  
 Capacity of Dynamo 35 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Starting platform  
 Position of Main Switch Board Near dynamo having switches to groups A. B. C. of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 1 + 3 Way S.P. 5 Amp. position near main board, 1 to 20 in Mess room, 1 + 4 Way S.P. 10 Amp. position top of engine room, 1 to 20 in Saloon passage, 1 to 20 6 Way in Wheel house, 1 to 20 2 Way starboard side forecabin  
 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 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 yes  
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes  
 Total number of lights provided for 60 arranged in the following groups:—  
 A Holdst. Engines 26 lights each of 16 candle power requiring a total current of 14.5 Amperes  
 B Engines 15 lights each of 16 candle power requiring a total current of 8.4 Amperes  
 C Mastheads 14 lights each of 16 candle power requiring a total current of 10.6 Amperes  
 D lights each of candle power requiring a total current of Amperes  
 E lights each of candle power requiring a total current of Amperes  
2 Mast head lights with 1 lamp each of 32 candle power requiring a total current of 1.1 Amperes  
2 Side lights with 1 lamp each of 32 candle power requiring a total current of 1.1 Amperes  
2 Cargo lights of 5 + 16 up each candle power, whether incandescent or arc lights Incandescent

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

Where are the switches controlling the masthead and side lights placed Wheelhouse

## DESCRIPTION OF CABLES.

Main cable carrying 33.5 Amperes, comprised of 19 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area  
 Branch cables carrying 14.5 Amperes, comprised of 7 wires, each 17 L.S.G. diameter, .0025 square inches total sectional area  
 Branch cables carrying 8.4 Amperes, comprised of 7 wires, each 19 L.S.G. diameter, .0013 square inches total sectional area  
 Leads to lamps carrying 5.6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 2.8 Amperes, comprised of 3 wires, each 20 L.S.G. diameter, .0010 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure Pure rubber, vulcanized rubber then taped & banded over all

Joints in cables, how made, insulated, and protected

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

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 Saved: main pipe



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*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Amoured*

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

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

How are cables carried through beams *All holes bushed with phi tube through bulkheads, &c. stuffing glands*

How are cables carried through decks *Deck tubes*

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 *Sub. iron pipe*

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

If so, how are the lamp fittings and cable terminals specially protected *Cargo spaces fitting with hinged cover*

Where are the main switches and cut outs for these lights fitted *Engine room*

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 *W. I. socket - plug*

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 *not* an amperemeter, fixed *on main board.*

The copper used is guaranteed to have a conductivity of *99* 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.

*H. K. Jones & Co.* Electrical Engineers Date *30/9/09*

COMPASSES.

Distance between dynamo or electric motors and standard compass *52 feet*

Distance between dynamo or electric motors and steering compass *48 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1.1</i>	<i>3</i>	<i>3</i>	<i>3</i>
<i>5.6</i>	<i>6</i>	<i>4</i>	<i>4</i>

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 *every* course in the case of the standard compass and *nil* degrees on *every* course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

*This Installation has been fitted under survey, the materials and workmanship were found to be good & efficient & when tested under full working condition, found satisfactory*

*Geo. A. Milner & Co.*  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that the Record Elec. Light be noted in the Reg. Book

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.