

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5285

Port of Middlesbrough Date of First Survey 2<sup>nd</sup> April Date of Last Survey 24/4/09 No. of Visits 4  
 No. in Reg. Book 60 on the Iron Steel S.S. "MAGDALENA" Port belonging to Terneuzen  
 Built at Stockton-on-Tees By whom Messrs Craig Taylor & Co. When built 1909  
 Owners A. G. Lensen Owners' Address Terneuzen  
 Yard No. 132 Electric Light Installation fitted by The Sunderland Forge & Eng. Co. Ltd. When fitted 1909

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar (4 Pole) compound wound Dynamo direct coupled to open type inverted Engine both by Sunderland Forge & Eng. Co. Ltd.  
 Capacity of Dynamo 42 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Top of Engine Room in Steering Gear Whether single or double wire system is used double

Position of Main Switch Board Close to Dynamo having switches to groups two of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one in Chartroom having 6 switches  
2 for side lights, 2 for Masthead, + 2 for Compasses.

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 100 per cent over the normal current

Are all cut outs fitted in easily accessible positions yes Are the fuses of standard dimensions no 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 92 arranged in the following groups:—

A	36	lights each of	16	candle power requiring a total current of	20.16	Amperes
B	56	lights each of	16	candle power requiring a total current of	31.36	Amperes
C		lights each of		candle power requiring a total current of		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 light with	1 lamp each of	32 cp D.Y.	candle power requiring a total current of	2.24	Amperes
2	Side light with	1 lamp each of	32 cp D.Y.	candle power requiring a total current of	2.24	Amperes
4	Cargo lights of	5 x 12		candle power, whether incandescent or arc lights	incandescent	

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

none fitted

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

## DESCRIPTION OF CABLES.

Main cable carrying 51.52 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .0612 square inches total sectional area

Branch cables carrying 31.36 Amperes, comprised of 4 wires, each 14 L.S.G. diameter, .0252 square inches total sectional area

Branch cables carrying 20.16 Amperes, comprised of 4 wires, each 16 L.S.G. diameter, .0225 square inches total sectional area

Leads to lamps carrying 1.12 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area

Cargo light cables carrying 2.8 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, .00322 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In Berths etc., Pure Rubber, vulcanised rubber taped and lead covered, Engine Room, Stokehole etc. Lead covered and armoured, mains vulcanised in iron pipes.

Joints in cables, how made, insulated, and protected There are none.

Are all the joints of cables thoroughly soldered, resin only having been used as a flux no 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 no

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 Main cables led in iron pipes  
Lead covered cables protected by fibre bushes where they pass through beams.



**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 Iron pipes

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat L.C. and armoured

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

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

How are cables carried through beams holes bushed with fibre through bulkheads, &c. watertight glands

How are cables carried through decks watertight Deck tubes.

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

If so, how are they protected iron pipes.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage no.

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 no.

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

The installation is yes supplied with a voltmeter and no an amperemeter, fixed on Switchboard

**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 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.

**P. FOR THE SUNDERLAND FORGE & ENGINEERING CO.**

Wm Morrison Electrical Engineers Date 24<sup>th</sup> April 1909

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 150 feet approximate

Distance between dynamo or electric motors and steering compass 145 do. do.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>8.4</u>	<u>10</u>	<u>6</u>	<u>6</u>
<u>.56</u>	<u>6</u>	<u>led into</u>	<u>led into</u>
<u>.56</u>	<u>led into</u>	<u>led into</u>	<u>6</u>

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 compasses course in the case of the standard compass and Nil degrees on all compasses course in the case of the steering compass.

J. P. Farthing Secretary. Builder's Signature. Date 28<sup>th</sup> April 1909.

**GENERAL REMARKS.** This installation has been fitted under survey. The materials and workmanship are good. On completion it was examined under full working conditions & found satisfactory

Wm Morrison & John H Heck.  
Surveyors 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.

REPORT FORM 11-3m34.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.