

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 19685

Port of Sunderland Date of First Survey ✓ Date of Last Survey May 19<sup>th</sup> 99 No. of Visits ✓  
 No. in 118 on the Iron or Steel S. S. Anglo-Australian Port belonging to London  
 Reg. Book 118 Built at Sunderland By whom Short Bros When built 1899  
 Owners Nitrate Producers' S. S. Co. Ltd. Owners Address London  
 Yard No. 283 Electric Light Installation fitted by Sld Forge & Eng Co. Ltd When fitted 1899

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound dynamo, 2 pole, coupled to 7" x 6" Open type Engine

Capacity of Dynamo 100 Amperes at 65 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed in Engine Room.

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

Positions of auxiliary switch boards and numbers of switches on each

Each lamp has a switch.

If cut outs are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch boards 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 Engineer instructed

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 72 arranged in the following groups:—

A Ford	5	lights each of	16	candle power requiring a total current of	5	Amperes
B Saloon	15	lights each of	16	candle power requiring a total current of	15	Amperes
C Cargo	24	lights each of	16	candle power requiring a total current of	24	Amperes
D Engine Room	13	lights each of	16	candle power requiring a total current of	16	Amperes
E Engineers & Officers	9	lights each of	16	candle power requiring a total current of	9	Amperes
1 Mast head light with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
2 Side light with	1	lamp each of	32	candle power requiring a total current of	4	Amperes

4 clusters Cargo lights of 6 lights each, 16 candle power, whether incandescent or arc lights incandescent

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

No arcs.

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

## DESCRIPTION OF CABLES.

Main cable carrying	72	Amperes, comprised of	19	wires, each	14	L.S.G. diameter, .096	square inches total sectional area
Branch cables carrying	15	Amperes, comprised of	7	wires, each	16	L.S.G. diameter, .022	square inches total sectional area
Branch cables carrying	9	Amperes, comprised of	7	wires, each	18	L.S.G. diameter, .012	square inches total sectional area
Leads to lamps carrying	1	Amperes, comprised of	1	wires, each	16	L.S.G. diameter, .003	square inches total sectional area
Cargo light cables carrying	6	Amperes, comprised of	130	wires, each	38	L.S.G. diameter, .005	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

2000 megohms vulcanised rubber, taped braided and compounded.

Joints in cables, how made, insulated, and protected Spliced, soldered, pure rubber tape & solution, Blackly tape & compound.

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 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 Iron pipes throughout holds, boilers & Engine room. Wood casing in saloons & cabins.

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 *None exposed.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *run in iron pipes.*

What special protection has been provided for the cables near boiler casings *iron pipes.*

What special protection has been provided for the cables in engine room *iron pipes.*

How are cables carried through beams *through fibre ferrules.* through bulkheads, &c. *water tight connection.*

How are cables carried through decks *deck tubes.*

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

If so, how are they protected *in 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 *—*

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 *yes* an amperemeter *yes in engine room*

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 *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.

By *W. Spalden* *W. Spalden* Electrical Engineers

Date *15.6.99*

COMPASSES.

Distance between dynamo or electric motors and standard compass *75 ft.*

Distance between dynamo or electric motors and steering compass *68 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1</i>	<i>3</i>	<i>4</i>	
A cable carrying	Amperes	feet from standard compass	feet from steering compass
A cable carrying	Amperes	feet from standard compass	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 *nil* degrees on *—* course in the case of the standard compass and *nil* degrees on *—* course in the case of the steering compass.

*Josh Brothers* Builder's Signature Date *June 16<sup>th</sup> 1899.*

GENERAL REMARKS.

*This installation as far as can be seen appears to be in accordance with the requirements of the Rules.*

*P. K. Salmon*

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

Committee's Minute

*This installation appears to be fitted in accordance with the Rules.*

*W. M. 20/6/99*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.