

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27910

Port of SUNDERLAND Date of First Survey 20.8.20 Date of Last Survey 27.8.20 No. of Visits 3  
 N in on the Iron or Steel 'SYDLAND' Port belonging to  
 Reg Book Built at SUNDERLAND By whom Wm. Duxford & Sons Ltd. When built 1920  
 Owners' Address  
 Yd No. 544 Electric Light Installation fitted by CLARK, CHAPMAN & CO. LTD. When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

A single cylinder double acting open type vertical engine direct coupled  
 to a continuous current compound wound dynamo  
 Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current continuous  
 There is Dynamo fixed In Engine Room Whether single or double wire system is used Double  
 Position of Main Switch Board near Dynamo having switches to groups A B C D & E of lights, etc., as below  
 Positions of auxiliary switch boards and numbers of switches on each Each light & group of lights provided  
with switches as required

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 50 per cent over the normal current

Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases Yes slate & porcelain

Total number of lights provided for 207 arranged in the following groups :-

A Saloon & Forward	68 lights each of	16	candle power requiring a total current of	38.1	Amperes
B Engine Room	100 lights each of	16	candle power requiring a total current of	56	Amperes
C Engine Room	27 lights each of	16	candle power requiring a total current of	15.1	Amperes
D Navigation	12 lights each of	16	candle power requiring a total current of	6.7	Amperes
E Wireless	lights each of		candle power requiring a total current of	25	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.2	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2.2	Amperes
12 Cargo lights of		6.16	candle power, whether incandescent or arc lights	incandescent	

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

Where are the switches controlling the masthead and side lights placed In Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying	150 Amperes, comprised of	37 wires, each	14 S.W.G. diameter,	.182 square inches total sectional area
Branch cables carrying	38.1 Amperes, comprised of	7 wires, each	15 S.W.G. diameter,	.028 square inches total sectional area
Branch cables carrying	15.1 Amperes, comprised of	7 wires, each	20 S.W.G. diameter,	.0075 square inches total sectional area
Leads to lamps carrying	1.6 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.0018 square inches total sectional area
Cargo light cables carrying	3.3 Amperes, comprised of	168 wires, each	38 S.W.G. diameter,	.0050 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber lined & braided & lead covered where exposed steel  
 sheathed small

Joints in cables, how made, insulated, and protected No joints except mechanical ones

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 Lead covered & slight sheathed cables run through  
cabin decks & clipped to beams with string galvanized iron clips.



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *no*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered & steel sheathed cables*

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

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 *In lead sheath* through bulkheads, &c. *in WT glands*

How are cables carried through decks *In galvanized iron deck sheath*

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

If so, how are they protected *Lead covered & steel sheathed cables*

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 fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers *no*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *to WT connection boxes*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Single wire system*

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

Is the installation supplied with a voltmeter *yes* and with an amperemeter *yes*, fixed *in bulkhead*

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, fuses, 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 not less than that of the English standard and the wires are protected by tinning from the sulphur compounds present in the insulating material

Insulation of cables is guaranteed to have a resistance of not less than 500 megohms per mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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 correct, complete, and in working condition.

Electrical Engineers

Date *Sept 13<sup>th</sup> 1920*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *112 ft*

Distance between dynamo or electric motors and steering compass *106 "*

The nearest cables to the compasses are as follows:—

A cable carrying *1.1* Amperes *12* feet from standard compass *6* feet from steering compass

A cable carrying *1.1* Amperes *6* feet from standard compass *12* 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 *all* course in the case of the

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

*WILLIAM DOXFORD & SONS, Limited.*

*W. Gallacher*

Builder's Signature.

Date *14 9 20*

**GENERAL REMARKS.**

*This installation appears to have been fitted in a satisfactory manner and in accordance with the rules*

*This is a copy of the original for THE RECORD*

*Blec St*

*Roll*

*20/9/20*

*W. H. H. H.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute



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TO WRITE ACROSS THIS MARGIN.

THE SURVEYORS ARE REQUIRED TO SIGN