

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27905.

Port of SUNDERLAND Date of First Survey 5.8.20 Date of Last Survey 14.8.20 No. of Visits 3
 No. in on the Iron or Steel "WILLIAM BLUMER" Port belonging to
 Reg. Book Built at SUNDERLAND By whom MESSRS JOHN BLUMER & CO LTD When built 1920
 Owners C. H. SORENSEN Owners' Address
 Yard No. 244 Electric Light Installation fitted by MESSRS SUNDERLAND FORGE & ENG CO LTD When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant consisting of single cylinder vertical steam type inverted engine 7x5" 360 Revs per min
 100 lbs steam coupled to compound wound multipolar dynamo.

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

Where is Dynamo fixed Engine Rm. Bottom Platform Starboard Side Whether single or double wire system is used double

Position of Main Switch Board close to dynamo having switches to groups six of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each in Chart Room with seven switches
controlling Foremast, Mainmast, Port, Starboard, Main, Compasses & Telegraphs

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

Are the fuses of non-oxidizable metal Yes and constructed to fuse at an excess of 100 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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 157 at 16 CP arranged in the following groups:-

A Saloon & Fore 15	lights each of	16 CP	candle power requiring a total current of	25.3	Amperes
B Navigation	16 lights each of	"	candle power requiring a total current of	9	Amperes
C Engineers	37 lights each of	"	candle power requiring a total current of	20.7	Amperes
D Apt	35 lights each of	"	candle power requiring a total current of	19.6	Amperes
E Engine Rm.	24 lights each of	"	candle power requiring a total current of	13.4	Amperes
Wireless	— lights each of	"	candle power requiring a total current of	15/25	Amperes
2 Mast head light with	2 lamps each of	32	candle power requiring a total current of	2.24	Amperes
2 Side light with	2 lamps each of	32	candle power requiring a total current of	2.24	Amperes
5 Cargo lights of	6 - 16		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 Room

DESCRIPTION OF CABLES.

Main cable carrying	100 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.119 square inches total sectional area
Branch cables carrying	25.3 Amperes, comprised of	7 wires, each	18 S.W.G. diameter,	.0125 square inches total sectional area
Branch cables carrying	9 Amperes, comprised of	7 wires, each	20 S.W.G. diameter,	.007 square inches total sectional area
Leads to lamps carrying	56 Amperes, comprised of	7 wires, each	25 S.W.G. diameter,	.0022 square inches total sectional area
Cargo light cables carrying	3.5 Amperes, comprised of	7 wires, each	25 S.W.G. diameter,	.0022 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insams Pure & Vule L.R. Tapes & Vulcanized then Armoured & Braided
 Machinery Spaces - do -
 Accommodation - do -
 Joints in cables, how made, insulated, and protected none made

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances — 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 none made

How are the cables led through the ship, and how protected Armoured & Braided cable clipped
to underside of Deck

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 *Armoured & Braided*

Cable on V.I.B. run in Iron Pipe

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

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

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

How are cables carried through beams *Holes bushed with fibre* through bulkheads, &c. *W/T Glands*

How are cables carried through decks *W/T Deck Joints*

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 *Armoured & Braided*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Yes - 2 Portables*

If so, how are the lamp fittings and cable terminals specially protected *Wooden Boxes*

Where are the main switches and fuses for these lights fitted *in Engine Room*

If in the spaces, how are they specially protected *None Fitted*

Are any switches or fuses fitted in bunkers *None Fitted*

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 *—*

Is the installation supplied with a voltmeter *Yes*, and with an amperemeter *Yes*, fixed on *Iron Stand*

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 Engineering Standards Committee's 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 *600* megohms per statute 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 in good order and safe working condition.

PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

Electrical Engineers

Date *17. Sept. 1910.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 feet*

Distance between dynamo or electric motors and steering compass *102 feet*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Distance from standard compass	Distance from steering compass
A cable carrying <i>9</i>	<i>6 feet</i>	<i>5 feet</i>	
A cable carrying <i>.56</i>	<i>led into</i>	<i>6</i>	
A cable carrying <i>.56</i>	<i>6</i>	<i>led into</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 *any* course in the case of the standard compass and *nil* degrees on *any* course in the case of the steering compass.

JOHN BLUMER & CO., LTD.

Builder's Signature.

Date *17. Sept. 1910.*

GENERAL REMARKS.

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

It is submitted that this vessel is eligible for

THE RECORD. Class Lt

Recd 16/9/10

Surveyor to Lloyd's Register of Shipping.

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.