

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27540

Port of SUNDERLAND Date of First Survey 28 May Date of Last Survey 2 Jun 19 No. of Visits 3
 No. in Reg. Book on the Iron Steel BRETWALDA Port belonging to Newcastle
 Built at SUNDERLAND By whom Messrs. The Sunderland S'g. Co. Ltd. When built 1919
 Owners Hall Bros. Ltd. Owners' Address Newcastle
 Yard No. 321 Electric Light Installation fitted by Messrs. The Sunderland Forge & Eng. Co. Ltd. When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant consisting of single cylinder vertical open type engine 4" x 5" 360 revs. 100 lbs steam - coupled to compound wound multipolar dynamo - both by S.T.C. Co.

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

Where is Dynamo fixed Engine Room - Port - Half - Side Whether single or double wire system is used double

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 in chart room with nine switches controlling Navigation lights - Morse light - Compasses - telegraph.

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 100 per cent over the normal current

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

Total number of lights provided for = 141 @ 16 cp. arranged in the following groups :-

A Accom.	64	lights each of	16	candle power requiring a total current of	35.8	Amperes
B Cargo	30	lights each of	"	candle power requiring a total current of	16.8	Amperes
C Navigation	23	lights each of	"	candle power requiring a total current of	12.9	Amperes
D E. B. Lu.	24	lights each of	"	candle power requiring a total current of	13.4	Amperes
E Wireless	-	lights each of	-	candle power requiring a total current of	25.0	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
5 Cargo lights of	six	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,	.094	square inches total sectional area
Branch cables carrying	35.8	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	12.9	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	.007	square inches total sectional area
Leads to lamps carrying	2.5	Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Cargo electric cables carrying	0.0	Amperes, comprised of		wires, each				

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Mains - Mast Spaces etc. - Pure Mule I.L. - taped - vulcanized - then Chromoid Braided
 Accom. - do - do - Lead Covered

Joints in cables, how made, insulated, and protected None

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 No

How are the cables led through the ship, and how protected A-B 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

1. I. & cable run in pipe or A-B cable used.

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 lashed with fibre.

through bulkheads, &c.

W.T. Glands

How are cables carried through decks

W. T. Deck Dubs.

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

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

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 Main Switchboard

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 June 4th 1919.

COMPASSES.

Distance between dynamo or electric motors and standard

DIRECTOR.

about 94 ft.

Distance between dynamo or electric motors and steering compass

102

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
12.2	Amperes	7	11
50	Amperes	led into	12
50	Amperes	12	led into

Have the compasses been adjusted with and without the electric installation at work at full power

standard compass and

degrees on

any course in the case of the steering compass.

For THE SUNDERLAND SHIPBUILDING CO. LD

Builder's Signature.

Date

June 13th 1919

GENERAL REMARKS.

SECRETARY.

The installation has been satisfactorily fitted in the vessel. Tested at full load and found good

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

4/7/19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute