

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 28240.

Port of SUNDERLAND Date of First Survey Dec 21 '21 Date of Last Survey Jan 20 '22 No. of Visits 6
 No. in Reg. Book on the Iron or Steel S.S. "ANDELLE" Port belonging to London
 Built at Sunderland By whom S.P. Austin & Son, Ltd. When built 1922
 Owners Normandy Shipping Co. Ltd. Owners' Address 4, St. Dunstan's Alley, London, E.C. 6.
 Yard No. 298 Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd. When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One combined plant consisting of single cylinder vertical steam light marked engine 100 H.P. steam 400 revs, coupled to compound wound multiphas dynamo.

Capacity of Dynamo 55 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed In Engine Room 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 switches controlling Port, Starboard, Foremast, Mainmast, Compasses, Telegraphs, & Morse Lamp.

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 120 @ 16 1/2 arranged in the following groups:—

A Hangar	29 lights each of	16 1/2	candle power requiring a total current of	17.4	Amperes
B Saloon & Forward	42 lights each of	"	candle power requiring a total current of	25.2	Amperes
C Engine & aft	29 lights each of	"	candle power requiring a total current of	17.4	Amperes
D Engine & Saloon	29 lights each of	"	candle power requiring a total current of	12.0	Amperes
E Wireless	- lights each of	-	candle power requiring a total current of	-	Amperes
2 Mast head light with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes
2 Side lights with	1 lamp each of	32	candle power requiring a total current of	2.4	Amperes
4 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 55 Amperes, comprised of 19 wires, each .064 S.W.G. diameter, .06 square inches total sectional area
 Branch cables carrying 25.2 Amperes, comprised of 7 wires, each .044 S.W.G. diameter, .01 square inches total sectional area
 Branch cables carrying 17.4 Amperes, comprised of 7 wires, each .036 S.W.G. diameter, .007 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .002 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Mains & Machinery Spaces: Per & Rule I.R. Paper & vulcanized then lead covered Armoured & Braided
 Accommodation Spaces: do do do then lead covered. 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 Lead covered Armoured & Braided cables clipped to 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 Lead covered Armoured Cables

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat do do

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 bashed with fibre through bulkheads, &c. W/T. Gland

How are cables carried through decks W/T. Duck Tubes

Are any cables run through coal bunkers — 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 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 -

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 2500 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.

p.pro. The Sunderland Forge & Engineering Co. Ltd.

Electrical Engineers

Date 7th February 1922

COMPASSES.

Director.

Distance between dynamo or electric motors and standard compass 150 feet

Distance between dynamo or electric motors and steering compass 145 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>17.4</u>	Ampères	<u>10</u>	feet from standard compass	<u>8</u>	feet from steering compass
A cable carrying	<u>.6</u>	Ampères	<u>8</u>	feet from standard compass	<u>led into</u>	<u>steering compass</u>
A cable carrying	<u>.6</u>	Ampères	<u>led into</u>	<u>standard compass</u>	<u>8.</u>	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 no degrees on each course in the case of the standard compass and no degrees on each course in the case of the steering compass.

FOR S. P. AUSTIN & SON, LIMITED

Builder's Signature.

Date 10th February 1922

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel, tested and found good. It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

Fee £ 6-0-0

Applied for 24/1/22 Paid 26/1/22 J.D.M.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.