

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27495

Port of SUNDERLAND Date of First Survey 7 Apr. Date of Last Survey 11 Apr '19 No. of Visits 3
 No. in Reg. Book on the Iron or Steel S.S. "WHITWOOD" Port belonging to London
 Built at SUNDERLAND By whom MESSRS J CROMPTON & SONS When built 1919
 Owners W. France Fenwick & Co Ltd Owners' Address London
 Yard No. 165 Electric Light Installation fitted by 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 6x5 350 hrs 100 lbs steam-coupled to compound wound multipolar Dynamo. Both by S.F.E. Co

Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Eng. Rm. Bolt Plaff. Starboard side Whether single or double wire system is used double

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

Positions of auxiliary switch boards and numbers of switches on each In Chart Room with seven 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 86 @ 16 cp arranged in the following groups:—

A	ART. ACCOMM ²⁰	20 lights each of	16	candle power requiring a total current of	11.2	Amperes
B	ENG R ²³ & ENG ²⁵	33 lights each of	16	candle power requiring a total current of	18.5	Amperes
C	SALOON & NAT ²⁸	33 lights each of	16	candle power requiring a total current of	18.5	Amperes
D		lights each of		candle power requiring a total current of		Amperes
E		lights each of		candle power requiring a total current of		Amperes
	2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.24	Amperes
	2 Side light with	1 lamps each of	32	candle power requiring a total current of	2.24	Amperes
	4 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

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

DESCRIPTION OF CABLES.

Main cable carrying	80 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.094 square inches total sectional area
Branch cables carrying	18.5 Amperes, comprised of	7 wires, each	18 S.W.G. diameter,	.0125 square inches total sectional area
Branch cables carrying	11.2 Amperes, comprised of	7 wires, each	20 S.W.G. diameter,	.0070 square inches total sectional area
Leads to lamps carrying	3 Amperes, comprised of	1 wires, each	18 S.W.G. diameter,	.0018 square inches total sectional area
Cargo light cables carrying	3.5 Amperes, comprised of	7 wires, each	21½ S.W.G. diameter,	.0049 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

MAINS - Pure & Vulk. I.R. taped & vulcanized, Braided & Compounded

MACH¹ SPACES etc. do, Armoured & Braided

CABIN ACCOMM²⁰ SPACES 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 V.I.R. Cables run in iron pipe.



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 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

What special protection has been provided for the cables in engine room 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 Tubes ✓

Are any cables run through coal bunkers No or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected V.I.R. Cable run in Iron Pipe

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 Switch

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.

P. PROTT SUNDERLAND WARE & ENGINEERING CO., LTD.

Electrical Engineers

Date 24 April 1919

COMPASSES.

Distance between dynamo or electric motors and standard compass Director about 120 ft.

Distance between dynamo or electric motors and steering compass " 125 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>6.2</u>	Ampere	<u>abt 10</u>	feet from standard compass	<u>abt 7</u>	feet from steering compass
A cable carrying	<u>.56</u>	Ampere	<u>9</u>	feet from standard compass	<u>led into</u>	feet from steering compass
A cable carrying	<u>.56</u>	Ampere	<u>led into</u>	feet from standard compass	<u>9</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 nil degrees of any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

JOHN CROWN & SONS, Ltd.

Builder's Signature.

Date 29/4/19.

GENERAL REMARKS.

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.

J.W.D.
6/5/19.

S. Davis

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

MAY 6 - 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

