

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7383

Port of Belfast Date of First Survey 22nd Dec. 1913 Date of Last Survey 20th May 1914 No. of Visits 12
 No. in Reg. Book on the Iron or Steel S.S. "San Francisco" Port belonging to London
 Built at Londonderry. By whom North of Ireland S.B. Co. Ltd When built 1914
 Owners Isthmian S.S. Co. Ltd Owners' Address London
 Yard No. 57 Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd When fitted 1914

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One multipolar Pallion dynamo coupled to Sunderland Forge & Eng. Co., Ltd.
 open type engine.

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current continuous.
 Where is Dynamo fixed Starboard side engine room. Whether single or double wire system is used double
 Position of Main Switch Board Near dynamo having switches to groups 9 circuits of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each No auxiliary switchboards.

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-oxidisable metal Tinned copper 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 yes

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

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

A	32	lights each of	16 c.p.	candle power requiring a total current of	Amperes
B	51	lights each of	16	candle power requiring a total current of	Amperes
C	14	lights each of	16	candle power requiring a total current of	Amperes
D	28	lights each of	16	candle power requiring a total current of	Amperes
E	34	lights each of	16	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	Amperes
2	Side light with 1	lamps each of	32	candle power requiring a total current of	Amperes
4	Cargo lights of	80	candle power, whether incandescent or arc lights	incandescent	

also 3 arc lamps taken 5 amperes each
 If arc lights, what protection is provided against fire, sparks, &c. enclosed arps used with outer glass.
lanterns

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

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	19.2	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	30.6	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Leads to lamps carrying	3	Amperes, comprised of	7	wires, each	23	S.W.G. diameter,	.0031	square inches total sectional area
Cargo light cables carrying	5	Amperes, comprised of	114	wires, each	38	S.W.G. diameter,	.0032	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure rubber, vulcanised rubber, taped, and lead covered overall.

In engine room, Boilerroom, and tweendeck armoured also.

Joints in cables, how made, insulated, and protected There are no joints.

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 ✓

How are the cables led through the ship, and how protected clipped up to deck with brass and galvanised clips

Holes in beams etc. for each armoured cable, & then drawn fast & clipped to underside of deck by wire rope

F. 10 lights of 16 c.p. & 1-5 amp. arc lamp total current 11 amps.

G. 13 " " 16 c.p. & 2-5 amp arc la.p. " " 17 "

H. Wireless telegraphy " " 15 "

I. Lathe motor L. H.P. " " 3 amp.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible yes in tween decks.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered and armoured wire fitted in these places.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered & Arm. wire fitted.

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 all armoured cables & a hole in beam for each cable with fibre forams through bulkheads, etc. Watertight glands.

How are cables carried through decks in galvanised iron clips pipes.

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 lead covered armoured cable clipped up to deck with iron clips.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage None.

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 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 1.250 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. L^{td}

Electrical Engineers Date 28th May 1914.

COMPASSES.

Distance between dynamo or electric motors and standard compass 104 feet

Distance between dynamo or electric motors and steering compass 100 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
8.4	10	12	
15	20	20	
11	28	25	

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

THE NORTH OF IRELAND SHIPBUILDING CO. L^{td}

Builder's Signature. Date 30th May 1914

GENERAL REMARKS.

The installation has been well fitted, and on trial was found satisfactory

It is submitted that this vessel is eligible for

THE RECORD. Elec. light

A. J. Thomas.

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute