

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 7034

Port of Belfast Date of First Survey 10th Nov. Date of Last Survey 21st Dec. 1911 No. of Visits 10
 No. in Reg. Book on the T.M. & Steel T. 8. 8. "Ekma" Port belonging to Glasgow
 Built at Belfast By whom Worthman Clark & Co. Ltd. When built 1911
 Owners British India Steam Nav. Co. Ltd. Owners' Address London
 Yard No. 308 Electric Light Installation fitted by The Sunderland Ship & Engineering Co. Ltd. When fitted 1911

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Combined plants consisting of single cylinder open type Engines each direct coupled to compound wound dynamo ✓
 Capacity of Dynamo 380 ✓ Amperes at 100 ✓ Volts, whether continuous or alternating current continuous ✓
 Where is Dynamo fixed Thrust recess ✓
 Position of Main Switch Board Near dynamos ✓ having switches to groups 6 ✓ of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each none fitted. ✓

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes ✓
 Are the cut outs of non-oxidizable metal tin ✓ and constructed to fuse at an excess of 100 ✓ per cent over the normal current
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes ✓

Total number of lights provided for 451 arranged in the following groups:—

A Forward 50	lights each of	16	candle power requiring a total current of	30	Amperes
B After 98	lights each of	16	candle power requiring a total current of	58.8	Amperes
C Eng. Room 78	lights each of	16	candle power requiring a total current of	44.8	Amperes
D Fans 40	lights each of		candle power requiring a total current of	22.8	Amperes
E Accommodation 160	lights each of	16	candle power requiring a total current of	98	Amperes
D Navigation 27		16		16.8	
2 Mast head light with 1	lamps each of	32	candle power requiring a total current of	2.4	Amperes
2 Side light with 1	lamps each of	32	candle power requiring a total current of	2.4	Amperes
3 Cargo lights of 8 light of 16			candle power, whether incandescent or arc lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed Chartroom. ✓

DESCRIPTION OF CABLES.

Main cable carrying	380	Amperes, comprised of	61	wires, each	13	L.S.G. diameter,	.4	square inches total sectional area
Branch cables carrying	98	Amperes, comprised of	19	wires, each	14	L.S.G. diameter,	.095	square inches total sectional area
Branch cables carrying	22	Amperes, comprised of	7	wires, each	16	L.S.G. diameter,	.022	square inches total sectional area
Leads to lamps carrying	.5	Amperes, comprised of	7	wires, each	23	L.S.G. diameter,	.003	square inches total sectional area
Cargo light cables carrying	4.8	Amperes, comprised of	130	wires, each	30	L.S.G. diameter,	.005	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wire insulated with pure and vulcanised india rubber taped and braided. ✓

Joints in cables, how made, insulated, and protected none used. ✓

Are all the joints of cables thoroughly soldered, resin only having been used as a flux ✓ 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 Through holds. Lead covered armoured and braided wires used. ✓

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 L.C.A. & B cables used. ✓

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat L.C.A. & B cables used ✓

What special protection has been provided for the cables near boiler casings L.C.A. & B Cables used ✓

What special protection has been provided for the cables in engine room L.C.A. & B cables used. ✓

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

How are cables carried through decks W.T. Deck tubes used ✓

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 L.C.A. & B cables used. ✓

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

If so, how are the lamp fittings and cable terminals specially protected with cast iron covers ✓

Where are the main switches and cut outs for these lights fitted in Engine Room. ✓

If in the spaces, how are they specially protected ✓

Are any switches or cut outs 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 ✓

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas ✓

Are any switches, cut outs, 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 installation is two supplied with two voltmeters and two amperemeters fixed on switchboard ✓

The copper used is guaranteed to have a conductivity of 100 ✓ per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 600 ✓ megohms per statute mile after 24 hours' immersion in seawater.

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.

THE SONDERLAND FORGE & ENGINEERING Co., Ltd.

W. M. Mann Electrical Engineers

Date 13th Jan 1912.

COMPASSES.

Distance between dynamo or electric motors and standard compass 150 feet

Distance between dynamo or electric motors and steering compass 150 feet

The nearest cables to the compasses are as follows:—

A cable carrying 16.3 Amperes 12 feet from standard compass 12 feet from steering compass

A cable carrying .6 Amperes on feet from standard compass on feet from steering compass

A cable carrying _____ Amperes _____ feet from standard compass _____ feet from steering compass

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

The maximum deviation due to electric currents, etc., was found to be nil ✓ degrees on all ✓ course in the case of the standard compass, and nil ✓ degrees on all ✓ course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED.

W. M. Mann Builder's Signature.

Date 18th Jan 1912

GENERAL REMARKS.

The installation has been well fitted and proved satisfactory on trial

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



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