

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6858

Port of Belfast Date of First Survey May 25th Date of Last Survey July 29th No. of Visits 4
 No. in Reg. Book 30 on the Iron or Steel T.S.S. "Athena" Port belonging to Pacific Steam Navigation Co.
 Built at Belfast By whom Lowland & Wolff L^{rs} When built 1910
 Owners Law, Swell & Allan Coy L^{rs} Owners' Address LONDON
 Yard No. 409 Electric Light Installation fitted by Lowland & Wolff L^{rs} When fitted 1910

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single Engine, cylinder 8"x7" stroke, D/c to Dynamo having an output of 15 KW. at 300 Rps.

Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current C.C.
 Where is Dynamo fixed Engine Room Whether single or double wire system is used Single
 Position of Main Switch Board Engine Room having switches to groups A.B.C.D.E.F.G.H.I.J.K. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 2 C.S. Switch & Fuse Boxes in Engine Room
each with 8.5 amp switches & 8.5 amp fuses, 1 C.S. Switch & Fuse Box in Boiler Room with 6.5 amp switches
and 8.5 amp fuses, and 1 Switch & Fuse Box in Engine Entrance with 10.5 amp switches & 14.5 amp fuses
 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 —
 Are the cut outs of non-oxidizable metal yes 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 294 lights arranged in the following groups :-

A Engine Room & Stoker's hold	74 lights each of	16	candle power requiring a total current of	44.4	Amperes
B Captain & Signals	44 lights each of	39 of 16 C.P. & 5 of 32	candle power requiring a total current of	24	Amperes
C Midship House	12 lights each of	16	candle power requiring a total current of	7.2	Amperes
D Engineers	15 lights each of	16	candle power requiring a total current of	9.0	Amperes
E Poop	7 lights each of	16	candle power requiring a total current of	4.2	Amperes
2 Mast head lights with	2 lamps each of	32	candle power ^{each} requiring a total current of	1.2	Amperes
2 Side lights with	2 lamps each of	32	candle power ^{each} requiring a total current of	1.2	Amperes
14 Cargo lights of	6 lights each & 4 Arcs		candle power, whether incandescent or arc lights	both	

If arc lights, what protection is provided against fire, sparks, &c. Glass globes around arcs

Where are the switches controlling the masthead and side lights placed in wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying	60 Amperes, comprised of	19 wires, each	16 L.S.G. diameter, .0604	square inches total sectional area
Branch cables carrying	10 Amperes, comprised of	7 wires, each	18 L.S.G. diameter, .01254	square inches total sectional area
Branch cables carrying	3.6 Amperes, comprised of	7 wires, each	20 L.S.G. diameter, .007052	square inches total sectional area
Leads to lamps carrying	3.6 Amperes, comprised of	7 wires, each	22 L.S.G. diameter, .004266	square inches total sectional area
Cargo light cables carrying	3.6 Amperes, comprised of	90 wires, each	36 L.S.G. diameter, .00407	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables throughout decks of 2500 megohm classed to C.M.A. quality insulated with pure rubber and vulcanized rubber, braided & compounded overall, cables in engine and boiler rooms further protected by steel armouring

Joints in cables, how made, insulated, and protected Soldered using resin as flux, with pure rubber and prepared kape and protected by wood casing in accommodation, and holds which is further protected by g. I. sheet in holds and refrigerated spaces

Are all the joints of cables thoroughly soldered, resin only having been used as a flux yes 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 yes

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 strong wood casing in accommodation and holds, which is further protected in holds & refrigerated spaces by g. I. sheet.



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 ripping

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered & steel armoured

What special protection has been provided for the cables near boiler casings Lead covered and steel armoured

What special protection has been provided for the cables in engine room Lead covered and steel armoured

How are cables carried through beams Beams bushed with fibre through bulkheads, &c. in glands if W.T. otherwise fibre bushes

How are cables carried through decks In Deck tubes bushed with fibre

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 Strong wood casing protected by G. I. sheeking

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 in heavy C.S. fittings with hinged lids

Where are the main switches and cut outs for these lights fitted in Switch & Fuse Box at Engineers Passage

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 permanently How fixed in Casing

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel through terminals on magnet frames

How are the returns from the lamps connected to the hull sweated to 3/8" dia. tinned brass tap screws to beams etc.

Are all the joints with the hull in accessible positions yes

The installation is supplied with a voltmeter and an amperemeter, fixed to switchboard

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 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 2500 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.

For Harland & Wolff Ltd. Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass 40 feet to nearest motor

Distance between dynamo or electric motors and steering compass 30

The nearest cables to the compasses are as follows:—

A cable carrying	<u>30.6</u>	Amperes	<u>10</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>2.4</u>	Amperes	<u>10</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>1.2</u>	Amperes	<u>10</u>	feet from standard compass	<u>6</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 on All course in the case of the standard compass and nil degrees on All course in the case of the steering compass.

For Harland & Wolff Ltd. Builder's Signature. Date 12th Nov 1910.

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules, and is of good description. It is submitted that this vessel is eligible for THE RECORD.

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.—5m.34.



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