

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27590

Port of *Glasgow* Date of First Survey *24 Feb* Date of Last Survey *1 April* No. of Visits *6*
 No. in Reg. Book on the *Iron or Steel* *S.S. "Pangan"* Port belonging to *Bangkok*
 Built at *Glasgow* By whom *Barclay Curle & Co Ltd* When built *1909*
 Owners *East Asiatic L.S. Co Ltd* Owners' Address
 Yard No. *476* Electric Light Installation fitted by *J H Holmes & Co N/ele* When fitted *1909*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 7 1/2 x 7" Open type engine to work at 100 lbs pressure per sq in with stand 200 lbs coupled to one 13/15 W. Type Dynamo, compound wound, 350 Reos.
 Capacity of Dynamo *110* Amperes at *100* Volts, whether continuous or alternating current *continuous*
 Where is Dynamo fixed *Starting Platform* Whether single or double wire system is used *Double. W.S.*
 Position of Main Switch Board *near Dynamo* having switches to groups *A.B.C.D.E.* of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each *2-way D.B. fusebox in steering gear recess: 1-9 way & 1-4 way*
Switch & fuse boxes in engine room: 1-3 way, 2-way and 1-9 way, Amidships: 1-3 way fusebox
aft: 1-3 way fusebox forward
 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 *yes* and constructed to fuse at an excess of *25* 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 *yes*
 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 *152.* arranged in the following groups:—
 A *engine room* *40* lights each of *16* candle power requiring a total current of *22.4* Amperes
 B *Cargos* *32* lights each of *16* candle power requiring a total current of *17.9* Amperes
 C *Ship* *80* lights each of *16* candle power requiring a total current of *44.24* Amperes
 D *Projector* lights each of candle power requiring a total current of *60* Amperes
 E *Arc lamps* lights each of candle power requiring a total current of *30* Amperes
2 Mast head lights with 1 lamp each of 32 candle power requiring a total current of 2.24 Amperes
2 Side lights with 1 lamp each of 32 candle power requiring a total current of 2.24 Amperes
4 Cargo lights of 8 x 16 cp & 2 Arcs: candle power, whether incandescent or arc lights Both
 If arc lights, what protection is provided against fire, sparks, &c. *Special Lanterns.*

Where are the switches controlling the masthead and side lights placed *Chart room*

DESCRIPTION OF CABLES.

Main cable carrying *110* Amperes, comprised of *37* wires, each *16* L.S.G. diameter, *.1176* square inches total sectional area
 Branch cables carrying *17.9* Amperes, comprised of *7* wires, each *17* L.S.G. diameter, *.070* square inches total sectional area
 Branch cables carrying *44.24* Amperes, comprised of *19* wires, each *17* L.S.G. diameter, *.0460* square inches total sectional area
 Leads to lamps carrying *50* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.0018* square inches total sectional area
 Cargo light cables carrying *4.48* Amperes, comprised of *7* wires, each *25 1/2* L.S.G. diameter, *.0050* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper, Pure Para Rubber, Vulc rubber, taped & Braided
L.C. in cables & Armoured in machinery spaces

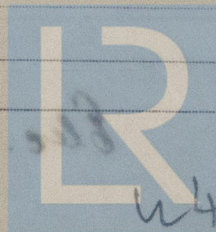
Joints in cables, how made, insulated, and protected

none

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 *yes*

How are the cables led through the ship, and how protected *In Iron Pipes*



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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 Armoured

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

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 Fibre Bushes through bulkheads, &c. W. I. Glands

How are cables carried through decks Deck Tubes

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 Iron Pipes

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 cut outs for these lights fitted —

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 W. I. Socket

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 —

The installation is — supplied with a voltmeter and also an amperemeter, fixed on Main S.W. Bd

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 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass 72 ft

Distance between dynamo or electric motors and steering compass 64 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
7.8	10 ft	8	
.56	8 ft	14	

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 — degrees on — course in the case of the standard compass and — degrees on — course in the case of the steering compass.

GENERAL REMARKS.

The installation has been well fixed and ran satisfactorily on trial

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

Committee's Minute GLASGOW 6 APR. 1909

It is submitted that the Record Elec. light be noted in the Reg. Book.