

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27185

Port of SUNDERLAND. Date of First Survey 7 Feb Date of Last Survey 5 April No. of Visits 2
 No. in Reg. Book on the Iron or Steel S/S CLAN MACBEAN Port belonging to Glasgow
 Built at Sunderland By whom Thos Bartram & Co. Ltd When built 1918
 Owners Can Line Ltd Owners' Address Glasgow
 Yard No. 243 Electric Light Installation fitted by Thos Clarke Chapman & Co. Ltd When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting open type vertical engine direct coupled to a continuous current compound wound dynamo
 Capacity of Dynamo 90 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed in Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board Near Dynamo having switches to groups A B C & D of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Each light & group of lights provided with switches as required

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 50% 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 slate & porcelain

Total number of lights provided for 124 arranged in the following groups:—

A Saloon	63	lights each of	16	candle power requiring a total current of	35.3	Amperes
B Engine	43	lights each of	16	candle power requiring a total current of	24.1	Amperes
C Engine Room	18	lights each of	16	candle power requiring a total current of	10.1	Amperes
D Windows	-	lights each of	-	candle power requiring a total current of	25	Amperes
E	-	lights each of	-	candle power requiring a total current of	-	Amperes
1 Mast head light with	1	lamps each of	32	candle power requiring a total current of	1.1	Amperes
2 Side light with	1	lamps each of	32	candle power requiring a total current of	2.2	Amperes
5 Cargo lights of	7-16			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 on bridge rail

DESCRIPTION OF CABLES.

Main cable carrying	90	Amperes, comprised of	19	wires, each	14	L.S.G. diameter, .094	square inches total sectional area
Branch cables carrying	35.3	Amperes, comprised of	7	wires, each	17	L.S.G. diameter, .017	square inches total sectional area
Branch cables carrying	10.1	Amperes, comprised of	1	wires, each	14	L.S.G. diameter, .0050	square inches total sectional area
Leads to lamps carrying	56	Amperes, comprised of	1	wires, each	18	L.S.G. diameter, .0018	square inches total sectional area
Cargo light cables carrying	3.9	Amperes, comprised of	168	wires, each	38	L.S.G. diameter, .0050	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber taped & braided & lead covered where exposed steel
 Armoured cable

Joints in cables, how made, insulated, and protected No joints except mechanical ones

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 Lead covered & steel armoured cables run through tween decks & clipped to underside of deck with strong galvanized iron clips

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *No*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered & steel Armoured cables*

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

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 *in lead bushes* through bulkheads, &c. in WT glands ✓

How are cables carried through decks *in galvanized iron deck tiles* ✓

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 *Lead covered & steel Armoured cables*

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 to WT connection boxes

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double wire system*

How are the returns from the lamps connected to the hull -

Are all the joints with the hull in accessible positions -

The installation is *Yes* supplied with a voltmeter and *also* an amperemeter, fixed on 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 *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.

For Clarke, Chapman & Co., Ltd.

W. Woodward Director.

Electrical Engineers

Date *April 18th 1918*

COMPASSES.

Distance between dynamo or electric motors and standard compass *96 ft*

Distance between dynamo or electric motors and steering compass *90*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.56</i>	<i>12</i>	<i>6</i>	
<i>.56</i>	<i>6</i>	<i>12</i>	

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 Bartram & Sons Ltd.

G. M. Rhind

Builder's Signature.

Date *April 23rd 1918*

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.

W.D. 25/4/18.

W.D. Davis.

24.4.18

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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