

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2593

Port of Sunderland Date of First Survey 1 Feb '12 Date of Last Survey 12 Mar '12 No. of Visits 5
 No. in Reg. Book 36 on the Iron or Steel S.S. Macedonia Port belonging to Andros
 Built at Sunderland By whom Sir J. P. Sainsbury & Sons Ltd When built 1917
 Owners Embros Bros (Lys) Owners' Address Blackburn Rd. (Lys)
 Yard No. 621 Electric Light Installation fitted by Blackburn & Co. Ltd When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Compound double acting open type vertical engines direct coupled to two continuous current compound wound dynamos
 Capacity of Dynamo 360 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 dynamos having switches to groups A B C D E F G H J K L M 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 756 arranged in the following groups:—

F	132	lights each of	16	candle power requiring a total current of	79.2	Amperes
A	128	lights each of	16	candle power requiring a total current of	76.8	Amperes
G	107	lights each of	16	candle power requiring a total current of	64.2	Amperes
B	87	lights each of	16	candle power requiring a total current of	52.2	Amperes
H	80	lights each of	16	candle power requiring a total current of	48	Amperes
C	76	lights each of	16	candle power requiring a total current of	45.6	Amperes
J	61	lights each of	16	candle power requiring a total current of	36.6	Amperes
D	43	lights each of	16	candle power requiring a total current of	25.8	Amperes
K	23	lights each of	16	candle power requiring a total current of	13.8	Amperes
E	19	lights each of	16	candle power requiring a total current of	11.4	Amperes
L	One 20" Projector		16,000		60	Amperes
M	2 Mast head light with 1 lamps each of	32	candle power requiring a total current of	1.2	Amperes	
	2 Side light with 1 lamps each of	32	candle power requiring a total current of	1.2	Amperes	
	4 Cargo lights of	6-16	candle power, whether incandescent or arc lights	30	Amperes	

If arc lights, what protection is provided against fire, sparks, &c. also 2-1000 candle power enclosed type arc lamps with hexagonal clear glass lanterns

Where are the switches controlling the masthead and side lights placed in wheel house

DESCRIPTION OF CABLES.

Main cable carrying 360 Amperes, comprised of 61 wires, each 13 L.S.G. diameter, 4.0000 square inches total sectional area
 Branch cables carrying 60 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, .06000 square inches total sectional area
 Branch cables carrying 12 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .01246 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 168 wires, each 38 L.S.G. diameter, .00502 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

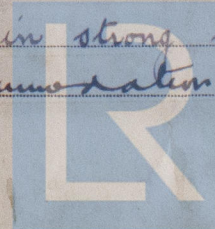
Vulcanized india rubber taped & braided & lead covered overall & where exposed lead covered & steel armoured

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. no.

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 cables laid in strong wood casings fastened to underside of deck through accommodation and LEAD & armoured cables through cargo spaces.



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 Lead covered & steel armoured

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

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 glands

How are cables carried through decks in galvanized iron deck tubes

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 & steel armoured

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 Strong Guarded fittings

Where are the main switches and cut outs for these lights fitted near Compaunins in accommodation

If in the spaces, how are they specially protected in Cast iron Cased fuse boxes.

Are any switches or cut outs fitted in bunkers no

Cargo light cables, whether portable or permanently fixed portable How fixed to W.T.C.I. 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 now supplied with 2 voltmeters and also two amperemeters 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 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 Clarke, Chapman & Co., Ltd.

Robert Scope Director

Electrical Engineers

Date March 29th 1912.

COMPASSES.

Distance between dynamo or electric motors and standard compass 160 ft

Distance between dynamo or electric motors and steering compass 156 "

The nearest cables to the compasses are as follows:—

A cable carrying .6 Amperes 12 feet from standard compass 6 feet from steering compass

A cable carrying .6 Amperes 6 feet from standard compass 12 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 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.

SIN JAMES LAING & SONS, LIMITED.

Arthur S. Taylor

Builder's Signature.

Date 3rd April 1912.

GENERAL REMARKS.

This installation is well fitted & ran satisfactorily on trial under full load.

William Butler

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

Committee's Minute



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.