

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 69562

Port of Mantle on Line Date of First Survey 13th Jan 17 Date of Last Survey 30th Apr 17 No. of Visits 4
 No. in on the Iron or Steel S.S. MADRONO Port belonging to London
 Reg. Book Built at Garnon By whom Kalmers & Co Ltd When built 1917
 Owners W. Wilhelmsen (A.M.B.) Owners' Address London
 Card No. 846 Electric Light Installation fitted by Kalmers & Co Ltd When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Single Cylinder Double Acting Vertical Engine Coupled direct to
Compound wound Continuous Current Dynamo
 Capacity of Dynamo 90 Amperes at 110 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Eng Rm, Platform aft Whether single or double wire system is used Double
 Position of Main Switch Board by Dynamo having switches to groups 5 in No of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each

If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes
 Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 50% per cent over the normal current
 Are all fuses 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
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes
 Total number of lights provided for 120 arranged in the following groups:—

A	Aft Accom	29	lights each of	25 C.P. H.F.	candle power requiring a total current of	11.6	Amperes
B	Midship	34	lights each of	25 C.P. H.F.	candle power requiring a total current of	13.6	Amperes
C	Pump Room	9	lights each of	18	candle power requiring a total current of	5.4	Amperes
D	Forecastle	14	lights each of	16	candle power requiring a total current of	8.4	Amperes
E	Engine Rm	24	lights each of	16	candle power requiring a total current of	14.4	Amperes
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
6	Cargo lights of	6 - 16 C.P.			candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. None fitted

Where are the switches controlling the masthead and side lights placed Wheel House on Bridge

DESCRIPTION OF CABLES.

Main cable carrying	58	Amperes, comprised of	19	wires, each	14	S.W.G. diameter,	.094	square inches total sectional area
Branch cables carrying	13.6	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	5.4	Amperes, comprised of	7	wires, each	18	S.W.G. diameter,	.0125	square inches total sectional area
Leads to lamps carrying	2.4	Amperes, comprised of	3	wires, each	22	S.W.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	3.6	Amperes, comprised of	176	wires, each	38	S.W.G. diameter,	.0049	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead Covered in Accommodation

Lead Covered & Armoured in Eng Rm & Forecastle

Joints in cables, how made, insulated, and protected no joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances none 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 none

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 in 2" Galvanized Tube, Fore & Aft



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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 Galvanized Iron pipe

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 Lead Covered & Armoured

What special protection has been provided for the cables in engine room " " " "

How are cables carried through beams Holes bushed with Lead through bulkheads, &c. Galv Iron pipe

How are cables carried through decks Galv Iron pipe

Are any cables run through coal bunkers Yes or cargo spaces no or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected Galv 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 none

Where are the main switches and fuses for these lights fitted none

If in the spaces, how are they specially protected none

Are any switches or fuses fitted in bunkers none

Cargo light cables, whether portable or permanently fixed both How fixed Blids' patent Terminal Boxes

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 —

Is the installation supplied with a voltmeter Yes and with an amperemeter Yes fixed on Switchboard

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas Yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion no

How are the lamps specially protected in places liable to the accumulation of vapour or gas W/S. Fittings

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 2500 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass 215 ft approx

Distance between dynamo or electric motors and steering compass 200 ft "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	Distance from standard compass	Distance from steering compass
<u>6</u>	<u>10</u>	<u>4</u> feet from standard compass	<u>4</u> feet from steering compass
<u>6.2</u>	<u>10</u>	<u>6</u> feet from standard compass	<u>6</u> feet from steering compass
<u>—</u>	<u>—</u>	<u>—</u> feet from standard compass	<u>—</u> 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 — degrees on — course in the case of the standard compass and — degrees on — course in the case of the steering compass.

PALMERS SHIPBUILDING & IRON CO., LD.,

J. H. Wandell

Builder's Signature. Date

GENERAL REMARKS.

This electric lighting installation has been fitted in accordance with the rules & found to work satisfactory with all lights on

It is submitted that this vessel is eligible for THE RECORD.

Elec. light.

J. H. Wandell 14/5/17

George Murdoch

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 15 MAY 1917

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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