

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41825

Port of GLASGOW Date of First Survey 13.1.22 Date of Last Survey 22.3.22 No. of Visits 9  
 No. in on the Iron or Steel S.S. "MALDA" Port belonging to GLASGOW  
 Reg. Book 23299 Built at WHITEINCH By whom MESRS BARCLEY CURLE & CO LTD When built 1922  
 Owners THE BRITISH INDIA ST. NAV. CO LTD Owners' Address  
 Yard No. 588 Electric Light Installation fitted by MESRS ARCHD WATSON & CO LTD When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

TOTAL KW = 165 ✓

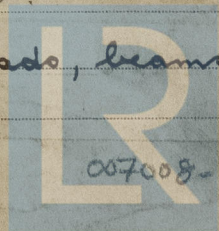
2 80 K.W. High Speed Compound wound generators by Newton & Co direct coupled to 2 Shanks enclosed type engine 1 16 K.W. Petrol emergency set.  
 Capacity of Dynamo 2 @ 800 & 1 @ 160 Amperes at 100 Volts, whether continuous or alternating current Continuous ✓  
 Where is Dynamo fixed Engine Room Starting Platform ✓ Whether single or double wire system is used Double ✓  
 Position of Main Switch Board Adjacent to Dynamoes ✓ having switches to groups 9 groups ✓ of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Emergency Switchboard in Emergency Dynamo House on Boat Deck (Midships) mounted with 5 Circuit Switches  
 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 100 ✓ 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 Yes ✓  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes ✓  
 Total number of lights provided for 720 & 160 fans. arranged in the following groups:—  
 A Emergency Switch lights each of ———— candle power requiring a total current of 160.00 Amperes  
 B 2-6 HP Motors lights each of ———— candle power requiring a total current of 90.00 Amperes  
 C 23 Radiators lights each of ———— candle power requiring a total current of 173.00 Amperes  
 D 17 " " lights each of ———— candle power requiring a total current of 165.00 Amperes  
 E 18 " " lights each of ———— candle power requiring a total current of 330.00 Amperes  
2 Mast head light with 1 lamps each of 16 candle power requiring a total current of 3 Amperes  
2 Side light with 1 lamps each of 16 candle power requiring a total current of 3 Amperes  
4 2000 C.P. 2000 C.P. 2 W.  
6-8 45 = 78 Cargo lights of 16 candle power, whether incandescent or arc lights Incandescent ✓  
 If arc lights, what protection is provided against fire, sparks, &c. No Arc Lamps Fitted ✓  
 Where are the switches controlling the masthead and side lights placed In Wheel House

## DESCRIPTION OF CABLES.

	2-CABLES EACH	+ EACH	
Main cable carrying <u>800</u> Amperes, comprised of <u>122</u> wires, each <u>13</u> S.W.G. diameter, <u>8000</u> square inches total sectional area			
Branch cables carrying <u>165</u> Amperes, comprised of <u>38</u> wires, each <u>14</u> S.W.G. diameter, <u>2000</u> square inches total sectional area			
Branch cables carrying <u>45</u> Amperes, comprised of <u>7</u> wires, each <u>16</u> S.W.G. diameter, <u>064</u> square inches total sectional area			
Leads to lamps carrying <u>2</u> Amperes, comprised of <u>3</u> wires, each <u>22</u> S.W.G. diameter, <u>029</u> square inches total sectional area			
Cargo light cables carrying <u>1.6</u> Amperes, comprised of <u>70</u> wires, each <u>0076</u> S.W.G. diameter, <u>003</u> square inches total sectional area			

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors of High Conductivity tinned Copper wire, Insulated with pure & Vulcanized India Rubber, the whole vulcanized together, taped, braided & lead covered armoured & braided. ✓  
 Joints in cables, how made, insulated, and protected None Made ✓  
 Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 Clipped to decks, bulkheads, beams and wood grounding. ✓



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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 Lead Covered Armoured & Braided Cables

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Covered A & B. Cables

What special protection has been provided for the cables near boiler casings Lead Covered Armoured & Braided

What special protection has been provided for the cables in engine room Lead Covered Armoured & Braided

How are cables carried through beams in Bulkhead Stoles through bulkheads, &c. W.T. Bulkhead Glands

How are cables carried through decks W.T. Deck Pipes

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

If so, how are they protected Lead Covered Armoured & Braided

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 Heavy Cast Iron Fittings with C.P. Covers

Where are the main switches and fuses for these lights fitted at Forecastle Distribution Box

If in the spaces, how are they specially protected —

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Portable How fixed Connection Box

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 (3), and with an amperemeter Yes (3), fixed on Switchboards

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

Are any switches, fuses, 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 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 600 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.

FOR ARCHD. WATSON & CO., LTD.,

Electrical Engineers

Date 24-3-22

COMPASSES.

D. Dandas

Distance between dynamo or electric motor's and standard compass

155 feet

Distance between dynamo or electric motors and steering compass

150

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>0.2</u>	<u>2</u>	<u>15</u>	<u>15</u>
<u>0.9</u>	<u>20</u>	<u>15</u>	<u>15</u>
<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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

H. T. Tully

Builder's Signature.

Date 27-3-22

GENERAL REMARKS.

This installation has been fitted on board under special survey.  
Tested under full working conditions of actual satisfactory.

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

FFS £35-5-0 9/12/22

7/4/22

J. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 4 APR 1922

Elec. Light

J.D.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

1m. 7/10—Transfer.



T.S.S. "MALDA"

ELECTRICAL REPORT CONTINUED.

CIRCUIT F.      ENGINE & BOILER ROOM.      1-6 HP.Motor.)  
    1-3 $\frac{1}{2}$  do. )  
    1-2 $\frac{3}{4}$  do. )  
    1-2 do. ) = 150.2 Amps.  
    2- $\frac{1}{2}$  do. )  
    5-500 Watt. )  
    101- 20 Watt. )

CIRCUIT G.      CREW & CARGO.      4 @ 1000 Watt. )  
    116 @ 20 Watt. ) = 65 Amps.  
    4 Fans @ 45 Watt. )

CIRCUIT H.      1st CLASS ACC.      37 Fans @ 60 Watt. )  
    47 Fans @ 45 Watt. ) = 81.15 Amps.  
    160 Lts. @ 20 Watt. )  
    58 Bed Lts.@ 12 Watt)

CIRCUIT I.      2nd CLASS ACC.      18 Fans @ 60 Watt. )  
    36 Fans @ 45 Watt. ) = 53.60 Amps.  
    115 Lts. @ 20 Watt. )  
    36 Bed Lts.@10 Watt)

EMERGENCY SWITCHBOARD:

CIRCUIT A.      EMERGENCY PUMP.      12 HP.Motor.      \*      90.00 Amps.

CIRCUIT B.      EMERGENCY LTS.      52@ 20 Watt.      \*      10.4 Amps.

CIRCUIT C.      OFFICERS & ENGINEERS.      38 Lts.@ 20 Watt.)  
    18 Fans@ 45 Watt.) = 16.9 Amps.  
    2 Fans@ 60 Watt.)

CIRCUIT D.      WIRELESS.      2.5 K.W.      = 25 amps.

CIRCUIT E.      NAVIGATION.      6 Lts.@ 100 Watt.)  
    8 Lts.@ 30 Watt.)  
    11 Lts.@ 20 Watt.) = 11.5 Amps.  
    2 Fans@ 45 Watt.)