

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 28377

Port of SUNDERLAND Date of First Survey 31st May 22 Date of Last Survey 21st July 1922 No. of Visits 6
 No. in Reg. Book 25112 Steel **'NALGORA'** Port belonging to Glasgow
 Built at Sunderland By whom Mr Gray & Co. (1911) Ltd When built 1921
 Owners British India Nav. Co. Ltd Owners' Address London
 Yard No. 946 Electric Light Installation fitted by WEAR SHIPYARD When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

TWO DIRECT COUPLED { ONE 8x8 ENGINE 100 LBS STEAM PRESSURE 18 K.W. 180 Amps 100 VOLTS @ 300 R.P.M.
 ONE 6x5 " " " " 6 " 60 " 100 " @ 350 " }
 Capacity of Dynamo 180 Amperes at 100 Volts, whether continuous or alternating current CONTINUOUS
 Where is Dynamo fixed ENGINE ROOM Whether single or double wire system is used DOUBLE
 Position of Main Switch Board NEAR DYNAMO having switches to groups 7 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each CHART HOUSE 9 SWITCHES
ENGINE ROOM 13 " "

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 YES
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases YES

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

A	84	lights each of	16	candle power requiring a total current of	44	Amperes	
B	18	lights each of	16	candle power requiring a total current of	9	Amperes	
C	28	lights each of	16	candle power requiring a total current of	14	Amperes	
D	25	lights each of	16	candle power requiring a total current of	12	Amperes	
E	3	lights each of	1000	candle power requiring a total current of	30	Amperes	
2	Mast head light with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
2	Side light with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
5	Cargo lights of	5	- 16	candle power, whether incandescent or arc lights	<u>INCANDESCENT.</u>		

If arc lights, what protection is provided against fire, sparks, &c. ---
 Where are the switches controlling the masthead and side lights placed CHART HOUSE

DESCRIPTION OF CABLES.

Main cable carrying 180 Amperes, comprised of 37 wires, each .085 S.W.G. diameter, 2000 square inches total sectional area
 Branch cables carrying 44 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, 0225 square inches total sectional area
 Branch cables carrying 14 Amperes, comprised of 7 wires, each .036 S.W.G. diameter, 0070 square inches total sectional area
 Leads to lamps carrying 2.5 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, 0020 square inches total sectional area
 Cargo light cables carrying 10 Amperes, comprised of 110 wires, each .0026 S.W.G. diameter, 0048 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

RUBBER LEAD ARMoured + BRAIDED
 Joints in cables, how made, insulated, and protected None

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances --- 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 ---
 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 Holes drilled in beam + clipped to deck



W54-0018

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 AND 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 IRON TUBES

What special protection has been provided for the cables in engine room LEAD COVERED ARMOURED, BRAIDED & COMPOUNDED ✓

How are cables carried through beams HOLES DRILLED through bulkheads, &c. W.T. GLANDS ✓

How are cables carried through decks IRON TUBES 18" HIGH ✓

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 ARMOURED CLIPPED TO DECK

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 fuses for these lights fitted —

If in the spaces, how are they specially protected —

Are any switches or fuses fitted in bunkers —

Cargo light cables, whether portable or permanently fixed PORTABLE How fixed W.T. BRONZE METAL CONNECTION 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 MAIN BOARD

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 _____ 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.

W.B. Shaw Electrical Engineers Date July 26th 1932

COMPASSES.

Distance between dynamo or electric motors and standard compass 144 FEET

Distance between dynamo or electric motors and steering compass 138 FEET

The nearest cables to the compasses are as follows:—

A cable carrying	<u>7</u>	Amperes	<u>16</u>	feet from standard compass	<u>12</u>	feet from steering compass
A cable carrying	<u>12</u>	Amperes	<u>34</u>	feet from standard compass	<u>30</u>	feet from steering compass
A cable carrying	<u>25</u>	Amperes	<u>34</u>	feet from standard compass	<u>30</u>	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 _____ course in the case of the standard compass and Nil degrees on _____ course in the case of the steering compass.

W.B. Shaw Builder's Signature. Date July 26th 1932

GENERAL REMARKS.

This installation has been fitted in a satisfactory manner and in accordance with the rules and on completion was tried under working conditions and found satisfactory

See 19.10.10 It is submitted that Applied for 21/7/32 this vessel is eligible for THE RECORD. Elec. light. W.B. Shaw Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.