

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 38870.

Port of Glasgow Date of First Survey 19.5.19 Date of Last Survey 19.6.19 No. of Visits 3
 No. in Reg. Book 595 on the Iron or Steel T.S.S. "NUDDA" Port belonging to Glasgow
 Built at Chydholm Yard, Whiteinch By whom Barclay, Curle & Co Ltd. When built 1919
 Owners The British India Steam Navigation Co. Owners' Address _____
 Yard No. 564 Electric Light Installation fitted by Archd. Watson & Co Ltd, Whiteinch When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-6 1/2" x 6" Open Type Vertical Engine 16 B. H. P. 360 R.P.M. at 100 lb. steam pressure.
1 Sunderland Forge Open Type Vertical Engine. capable of driving a 15 H. W. Dynamo at 100 lbs. steam pressure.
 Capacity of Dynamo 1 at 150 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Tween deck level in Engine Room Whether single or double wire system is used double

Position of Main Switch Board Adjacent to generators having switches to groups 10 Circuits of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each None

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-oxidisable 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 253 arranged in the following groups:—

A	Jord Cargos	²⁷ 2	lights each of	¹⁶ 6 1/2 amp	candle power requiring a total current of	30.28	Amperes
B	Aft. Crew	³¹ 5	lights each of	16 metallic	candle power requiring a total current of	9.40	Amperes
C	Aft. Cargos	²⁷ 1	lights each of	16 Carbon	candle power requiring a total current of	23.76	Amperes
D	Wireless	—	lights each of	—	candle power requiring a total current of	30.00	Amperes
E	Engine & Boiler	60	lights each of	16 Carbon	candle power requiring a total current of	38.40	Amperes
	2 Mast head light with 2 lamps each of	32			candle power requiring a total current of	2.56	Amperes
	2 Side light with 2 lamps each of	32			candle power requiring a total current of	2.56	Amperes
	15 Cargo lights of			6-bulb at 10 c.p. 2 Arc lamps at 6 1/2 amp	candle power, whether incandescent or arc lights	12 Incandescent. 3 Arc lamps	

If arc lights, what protection is provided against fire, sparks, &c. Totally enclosed in inner Glass, and protected by outer Globe

Where are the switches controlling the masthead and side lights placed Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 37 wires, each 13 S.W.G. diameter, .025 square inches total sectional area
 Branch cables carrying 38.4 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Branch cables carrying 10.8 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area
 Leads to lamps carrying 5 Amperes, comprised of 1 wires, each 17 S.W.G. diameter, .0025 square inches total sectional area
 Cargo light cables carrying 17.2 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

V.I.R. cables protected by G.I. wire armouring and braiding.

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 — 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 Generally in Accommodation cables are of lead covered pattern clipped direct to decks & Bulkheads. In machinery spaces the cables are of Armoured pattern clipped as above, and in exposed places cables are led through pipes.

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
Either armouring or G.I. pipes.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat as above

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 With fibre ferrules. through bulkheads, &c. in W.F. Stuffing boxes.

How are cables carried through decks In pipes standing at least 15" above deck level.

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 G.I. 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 —

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 No

Cargo light cables, whether portable or permanently fixed Portable. How fixed —

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 —

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.

Messrs Archd Watson & Co Ltd, Whiteinch Electrical Engineers Date 27-6-19.

COMPASSES.

Distance between dynamo or electric motors and standard compass 165 feet.

Distance between dynamo or electric motors and steering compass 160 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>6</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>10.5</u>	<u>6</u>	<u>4</u>	<u>4</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

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.

FOR BARGRAY, CURRIE & Co, Ltd. Builder's Signature. Date 28th June 19

GENERAL REMARKS.

This Installation has been fitted on board under special survey. Tested under full working conditions found satisfactory.

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

Rel. 8/8/19

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

Committee's Minute GLASGOW 6 AUG 1919

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

ELECTRICAL REPORT (contd.)

T.S.S. "NUDDEA"

Circuit F.

ENGINEERS' ACCOM. 32 lights at 5 c.p. requiring a total current)
of)
5 lights at 16 C.P. " " ") 13.65 amps.
9 Fans at 45 Watts " " ")

Circuit G.

SALOON ACCOMM. 40 Lights at 5 C.P. requiring a total current)
& NAVIGATION. of)
8 Lights at 16 " " " ") 18.07
11 Fans at 45 Watts " " ")

RETAIN



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