

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8318.

Port of DUNDEE Date of First Survey 6-12-1920 Date of Last Survey 1-4-1921 No. of Visits 12
 No. in on the Iron or Steel S. S. "NORWEGIAN" Port belonging to
 Reg. Book Built at Dundee By whom Balston Shipbuilding & En. Co. Ltd. When built 1920-1
 Owners J. Langland & Co. Ltd. Owners' Address Liverpool
 Yard No. 254 Electric Light Installation fitted by Campbell & Sherwood, Bootle When fitted 1920-1

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Open Type Engines direct coupled to 2 11.4 H.P. 4 pole Compound Wound Dynamos.

Capacity of Dynamo 114 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 do. having switches to groups 5 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine Room 6 switches
Chart Room 5 + 4 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

Are the fuses of non-oxidisable metal Yes and constructed to fuse at an excess of 80 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 | 57 | lights each of | 16 | candle power requiring a total current of | 25 | Amperes |
| B | 34 | lights each of | 16 | candle power requiring a total current of | 18 | 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 | 33 | lights each of | 16 | candle power requiring a total current of | 16 | Amperes |
| 2 | Mast head light with 2 lamps each of | 32 | candle power requiring a total current of | 2 | Amperes | |
| 2 | Side light with 2 lamps each of | 32 | candle power requiring a total current of | 2 | Amperes | |
| 5 | Cargo lights of | 6-5 light | candle power, whether incandescent or arc lights | Incandescent | | |

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

Main cable carrying 114 Amperes, comprised of 34 wires, each .064 S.W.G. diameter, .1200 square inches total sectional area

Branch cables carrying 25 Amperes, comprised of 4 wires, each .064 S.W.G. diameter, .02224 square inches total sectional area

Branch cables carrying 14 Amperes, comprised of 4 wires, each .044 S.W.G. diameter, .0100 square inches total sectional area

Leads to lamps carrying 5 Amperes, comprised of 1 wires, each .044 S.W.G. diameter, .0015 square inches total sectional area

Cargo light cables carrying 2 Amperes, comprised of 3 wires, each .036 S.W.G. diameter, .0030 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered Armoured Braided in Engine and Boiler Spaces. Y. I. R. in Steel Tubes.

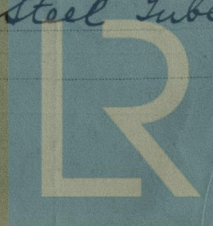
Joints in cables, how made, insulated, and protected

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 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 Y. I. R. in Steel Tubes on Deck



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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 *L.C.A.B.*

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

What special protection has been provided for the cables near boiler casings *do*

What special protection has been provided for the cables in engine room *do.*

How are cables carried through beams *Fibre Ferrules.* through bulkheads, &c. *Brass Glands.*

How are cables carried through decks *Galv. Steel Pipes 18" Above Deck.*

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

If so, how are they protected

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 *both* How fixed *Connection Boxes on deck*

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 *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. Campbell & Isherwood & Co Electrical Engineers

Date *23/8/21.*

COMPASSES.

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

| | | | | | | |
|------------------|-----------|---------|-----------|----------------------------|-----------|----------------------------|
| A cable carrying | <i>14</i> | Ampères | <i>6</i> | feet from standard compass | <i>6</i> | feet from steering compass |
| A cable carrying | <i>12</i> | Ampères | <i>25</i> | feet from standard compass | <i>25</i> | feet from steering compass |
| A cable carrying | | Ampères | <i>—</i> | 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 course in the case of the standard compass and *nil.* degrees on course in the case of the steering compass.

Builder's Signature. Date

GENERAL REMARKS.

The electrical installation of this vessel has been fitted under special survey & the materials & workmanship are good. The installation examined under full working conditions found in order. It is eligible in my opinion to have power of electric lights.

114 Watts @ £1 = £11:8:0 Fee. Elec. Light. Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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