

FRI OCT 29 1920

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 73725

Port of NEWCASTLE ON TYNE Date of First Survey 19/7/20 Date of Last Survey 1/10/20 No. of Visits 4
 on the ~~Iron~~ Steel SS. TREVORIAN Port belonging to British
 Book No. 904 Built at South Shields By whom Messrs. J. Readhead & Sons When built 1920
 Owners Hain S.S. Co. Ltd (Hain Son Managers) Owners' Address
 No. 462 Electric Light Installation fitted by Messrs. Clarke Chapman & Co. Ltd When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting open type vertical engine direct coupled to a continuous current compound wound dynamo
 Capacity of Dynamo 150 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed In Engine Room Whether single or double wire system is used Double
 Position of Main Switch Board Near Dynamo having switches to groups A B C D & E of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Each light & group of lights provided with switches as required

Are fuses 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
 Is vessel 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 slate & porcelain

Total number of lights provided for 127 arranged in the following groups:—
Saloon & forward 57 lights each of 16 candle power requiring a total current of 31.9 Amperes
Engine room aft 44 lights each of 16 candle power requiring a total current of 24.6 Amperes
Engine Room 26 lights each of 16 candle power requiring a total current of 14.5 Amperes
Projector & arc lamps lights each of 16,000 & 2,000 candle power requiring a total current of 90 Amperes
Wireless lights each of - candle power requiring a total current of 25 Amperes
2 Mast head light with 1 lamps each of 32 candle power requiring a total current of 2.2 Amperes
2 Side light with 1 lamps each of 32 candle power requiring a total current of 2.2 Amperes
5 Cargo lights of 6.16 candle power, whether incandescent or arc lights incandescent

If arc lights, what protection is provided against fire, sparks, &c. 2. Arc lamps with totally enclosed clear glass hexagonal lanterns

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

DESCRIPTION OF CABLES.

Main cable carrying 150 Amperes, comprised of 37 wires, each 14 S.W.G. diameter, .1824 square inches total sectional area
 Branch cables carrying 31.9 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .017 square inches total sectional area
 Branch cables carrying 14.5 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area
 Leads to lamps carrying 1.6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 3.3 Amperes, comprised of 168 wires, each 38 S.W.G. diameter, .0050 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

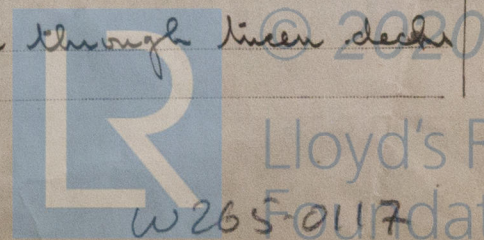
Vulcanized india rubber taped & braided & lead covered where exposed steel armored cable

Joints in cables, how made, insulated, and protected No joints except mechanical ones

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 Lead & armored cables run through linen deck & clipped to beams with sling galvanized rim clips.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *No*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead & Armoured cables*

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

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 *In lead bushes* through bulkheads, &c. in *WT glands*

How are cables carried through decks *In galvanized iron deck tubes*

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 *Lead covered & steel armoured cables*

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 *To WT Connection Boxes*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel

Double wire system

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 *650* 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 Clarke, Chapman & Co. Ltd.

Electrical Engineers

Date *Oct 20th 1920*

COMPASSES.

Distance between dynamo or electric motors and standard compass

96 ft

Distance between dynamo or electric motors and steering compass

90 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1.1</i>	<i>12</i>	<i>6</i>	<i>6</i>
<i>1.1</i>	<i>6</i>	<i>12</i>	<i>12</i>
<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>

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

all

course in the case of the

standard compass and

Nil

degrees on

all

course in the case of the steering compass.

For JOHN READHEAD & SONS, LIMITED.

John H. Readhead

Builder's Signature.

Date *25.10.20*

GENERAL REMARKS.

The above installation is in accordance with the Society's Rules. It has been tested & found satisfactory.

It is submitted that this report is for the use of the Committee.

Lee St.

Ref 29/10/20.

W.T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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