

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 39493.

Port of Glasgow Date of First Survey 3/11/19 Date of Last Survey 1/12/19 No. of Visits 2
 No. in on the ~~Iron~~ Steel S.S. "ARANA" Port belonging to London
 Reg. Book 3/2656 Built at Point House By whom Messrs A & J Inglis Ltd When built 1919
 Owners MacAndrews & Co Ltd Owners' Address London
 Yard No. 326 Electric Light Installation fitted by Messrs Salford & Co & McHay Ltd When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Enclosed splash lubrication Engine direct coupled
to compound wound dynamo
 Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or ~~alternating~~ current continuous
 Where is Dynamo fixed Engine room Steel Whether single or double wire system is used double
 Position of Main Switch Board Engine room Steel having switches to groups 5 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-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 158 arranged in the following groups:—

| | | | | | | |
|-------------------------|----|---|--------------|---|----|---------|
| A Accommodation | 55 | lights each of | 20 watts | candle power requiring a total current of | 11 | Amperes |
| B Cargo | 64 | lights each of | 16 | candle power requiring a total current of | 32 | Amperes |
| C Navigation | 11 | lights each of | various | candle power requiring a total current of | 7 | Amperes |
| D Engines | 28 | lights each of | 16 | candle power requiring a total current of | 14 | Amperes |
| E Winches | 4 | lights each of | 1/4 Kw | candle power requiring a total current of | 4 | Amperes |
| 2 Mast head lights 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 |
| 8 Cargo lights of each | 96 | candle power, whether incandescent or are lights | Incandescent | | | |

If arc lights, what protection is provided against fire, sparks, &c. none

Where are the switches controlling the masthead and side lights placed Chart Room

DESCRIPTION OF CABLES.

Main cable carrying 80 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .093 square inches total sectional area
 Branch cables carrying 32 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .034 square inches total sectional area
 Branch cables carrying 14 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Leads to lamps carrying 2 Amperes, comprised of 1 wires, each 17 S.W.G. diameter, .002 square inches total sectional area
 Cargo light cables carrying 6 Amperes, comprised of 1 wires, each 14 S.W.G. diameter, .005 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Armoured & braided cable used in holds & engine spaces
Rad covered cable used in cabins & bridge

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 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 Through clear holes in beams & clipped to decks and bulkheads

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 casing

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Armour & braiding

What special protection has been provided for the cables near boiler casings Armour & braiding

What special protection has been provided for the cables in engine room Armour & braiding

How are cables carried through beams Clear holes through bulkheads, &c. W. T. Glands

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

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

If so, how are they protected Armour & braiding and piping

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 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.

Selford Green & Mackay Ltd Electrical Engineers Date Dec 25-19

COMPASSES.

Distance between ~~dynamo~~ or electric motor and standard compass 20 feet

Distance between ~~dynamo~~ or electric motor and steering compass 17 feet

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|----------|----------------------------|----------------------------|
| <u>3</u> | <u>8</u> | <u>6</u> | <u>6</u> |
| <u>.5</u> | <u>3</u> | <u>3</u> | <u>3</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 Nil degrees on any course in the case of the steering compass.

A. & J. INGLIS, LIMITED.

James D. Inglis Director.

Builder's Signature. Date 27th Decr 1919.

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.

J. Stanley Rankin.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 6-JAN 1920

Elec. Light.



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