

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 24719

Port of Sunderland Date of First Survey Feb. 1 Date of Last Survey Feb. 11, 1911 No. of Visits 3
 No. in Reg. Book 44 on the Iron or Steel 55 Terrier Port belonging to Lonsberg
 Built at Sunderland By whom Jos. L. Thompson & Sons Ltd. When built 1911
 Owners W. Wilhelmsen Owners' Address Grange, near Lonsberg
 Yard No. 478 Electric Light Installation fitted by Sunderland Forge Engineering Co. Ltd. When fitted 1911

DESCRIPTION OF DYNAMO, ENGINE, ETC.

A 15 kw steam set fitted 5.41. There is also a 10 kw set not in parallel
Multipolar compound wound Dynamo direct coupled to Open-type inverted
Engine both by Sunderland Forge Engineering Co. Ltd. See Vol. Rept 11799

Capacity of Dynamo 55 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Bottom of Engine room Star side Whether single or double wire system is used double

Position of Main Switch Board Close to dynamo having switches to groups Three of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each

None fitted

If cut outs are fitted on main switch board to the cables of main circuit No and on each auxiliary switch board to the cables of auxiliary circuits No and at each position where a cable is branched or reduced in size No and to each lamp circuit No

If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the cut outs of non-oxidizable metal No and constructed to fuse at an excess of 100 per cent over the normal current

Are all cut outs fitted in easily accessible positions No Are the fuses of standard dimensions No 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 No

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases No

Total number of lights provided for 85 arranged in the following groups:—

| | | | | | | |
|---|-----------|----------------|-----------|---|--------------|---------|
| A | <u>40</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>22.40</u> | Amperes |
| B | <u>28</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>15.68</u> | Amperes |
| C | <u>17</u> | lights each of | <u>16</u> | candle power requiring a total current of | <u>9.52</u> | Amperes |
| D | | lights each of | | candle power requiring a total current of | | Amperes |
| E | | lights each of | | candle power requiring a total current of | | Amperes |
| — Mast head light with . lamps each of . candle power requiring a total current of . Amperes | | | | | | |
| — Side light with . lamps each of . candle power requiring a total current of . Amperes | | | | | | |
| <u>8</u> Cargo lights of <u>5</u> each <u>16</u> candle power, whether incandescent or arc lights <u>incandescent</u> | | | | | | |

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

None fitted
None fitted

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

| | | | | | | |
|-----------------------------|--------------|-----------------------|-----------|-------------|-----------|---|
| Main cable carrying | <u>55</u> | Amperes, comprised of | <u>19</u> | wires, each | <u>16</u> | L.S.G. diameter, <u>0.6039</u> square inches total sectional area |
| Branch cables carrying | <u>22.40</u> | Amperes, comprised of | <u>7</u> | wires, each | <u>16</u> | L.S.G. diameter, <u>0.0077</u> square inches total sectional area |
| Branch cables carrying | <u>15.68</u> | Amperes, comprised of | <u>7</u> | wires, each | <u>17</u> | L.S.G. diameter, <u>0.0172</u> square inches total sectional area |
| Leads to lamps carrying | <u>1.12</u> | Amperes, comprised of | <u>1</u> | wires, each | <u>18</u> | L.S.G. diameter, <u>0.0188</u> square inches total sectional area |
| Cargo light cables carrying | <u>2.8</u> | Amperes, comprised of | <u>1</u> | wires, each | <u>16</u> | L.S.G. diameter, <u>0.0322</u> square inches total sectional area |

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Berths &c.: Pure rubber vulcanized & rubber taped & lead covered
Engine room & Storehold: Announced & braided
Main cables: Vulcanized rubber drawn in iron pipes

Joints in cables, how made, insulated, and protected

There are none

Are all the joints of cables thoroughly soldered, resin only having been used as a flux . 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 Led through twin decks in iron 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? *Iron pipes*

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

What special protection has been provided for the cables near boiler casings? *Armoured & Braided cables*

What special protection has been provided for the cables in engine room? *No*

How are cables carried through beams? *holes bushed with fibre* through bulkheads, &c. *waterlight glands*

How are cables carried through decks? *waterlight deck tubes*

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? *By iron 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 cut outs for these lights fitted?

If in the spaces, how are they specially protected?

Are any switches or cut outs 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?

The installation is *Yes* supplied with a voltmeter and *No* an amperemeter, fixed *on Switchboard*

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas?

Are any switches, cut outs, 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 *99* per cent, that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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.

Myron Mar Electrical Engineers Date *23 March 1911*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 120 ft*

Distance between dynamo or electric motors and steering compass *170*

The nearest cables to the compasses are as follows:—

| A cable carrying | Amperes | feet from standard compass | feet from steering compass |
|------------------|-----------------|----------------------------|----------------------------|
| <i>2. 25</i> | <i>about 12</i> | <i>6</i> | <i>6</i> |
| <i>1. 12</i> | <i>6</i> | <i>6</i> | <i>6</i> |
| A cable carrying | Amperes | 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 _____ degrees on _____ course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

Builder's Signature. Date *Thomas Thompson*

GENERAL REMARKS.

This installation has been well fitted & ran satisfactorily under steam at full load.

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

William Butler
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute