

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17508.

Port of Glasgow. Date of First Survey 19th June, 1919. Date of Last Survey 13th August, 1919. No. of Visits 11.
 No. in on the ~~Iron~~ Steel S.S. Backworth Port belonging to Newcastle.
 Reg. Book Built at Port Glasgow. By whom Messrs. Dunlop, Bremner When built 1919.
 Owners The Robert Stanley Shipping Co. Ltd. Owners' Address R. S. Dalgleish, Newcastle on Tyne.
 Yard No. 335 Electric Light Installation fitted by Claud Hamilton Ltd When fitted 1919.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Open type steam engine direct coupled to compound wound
ship lighting dynamo
 Capacity of Dynamo 100 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 Engine Room 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 104 - 16 C.P.
5 - 32 C.P. arranged in the following groups:—

A	<u>49</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>29.4</u>	Amperes
B	<u>5</u>	lights each of	<u>32</u>	candle power requiring a total current of	<u>6</u>	Amperes
C	<u>24</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>14.4</u>	Amperes
D	<u>26</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>13.2</u>	Amperes
E		lights each of		candle power requiring a total current of		Amperes
<u>2</u>	Mast head light with	/	lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u> Amperes
<u>2</u>	Side light with	/	lamps each of	<u>1-16</u> <u>1-32</u>	candle power requiring a total current of	<u>1.8</u> Amperes
<u>4</u>	Cargo lights of	each	<u>6 - 16</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

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

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

DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>14</u>	S.W.G. diameter,	<u>.093</u>	square inches total sectional area
Branch cables carrying	<u>29</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>16</u>	S.W.G. diameter,	<u>.022</u>	square inches total sectional area
Branch cables carrying	<u>14</u>	Amperes, comprised of	<u>4</u>	wires, each	<u>22</u>	S.W.G. diameter,	<u>.004</u>	square inches total sectional area
Leads to lamps carrying	<u>6.4</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>18</u>	S.W.G. diameter,	<u>.0018</u>	square inches total sectional area
Cargo light cables carrying	<u>3.6</u>	Amperes, comprised of	<u>40</u>	wires, each	<u>40</u>	S.W.G. diameter,	<u>.002</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Copper wire insulated with pure and vulcanized India rubber
taped and lead covered. (Engine Room holds armoured)

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 Traced by means of clips to bulkheads
and under decks

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 cover*

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

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

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

How are cables carried through beams *Lead bushes* through bulkheads, &c. *W. T. Glands*

How are cables carried through decks *W. T. 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 *Armoured*

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 *Engine Room*

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 *2500* 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 *Claud Hamilton Ltd* Electrical Engineers Date *22nd Aug 19.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *48 feet*

Distance between dynamo or electric motors and steering compass *53 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
3.6	16	10	
2.4	10	7	
6	3	3	

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.

DUNLOP, BRENNER & COY. LIMITED.

Geo. G. Parker

Builder's Signature.

Date

26 August 1919

GENERAL REMARKS.

The material and workmanship are good, and on completion the installation was tested under full power with satisfactory results and appears to be in accordance with the Society's requirements.

It is submitted that this vessel is eligible for

THE RECORD. Elec. Light.

Committee's Minute

GLASGOW

10 SEP. 1919

Elec. Light

Graham Robertson.

Surveyor to Lloyd's Register of Shipping.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.