

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17786

Port of Greenock. Date of First Survey 2nd May, 1921 Date of Last Survey 2nd March, 1921 No. of Visits 10
 No. in on the Iron or Steel S.S. "GOBEO." Port belonging to Bilbao
 Reg. Book Built at Port - Glasgow By whom Robert Duncan & Co. Ltd. When built 1921
 Owners Comp. Contralica de Navegacion Owners' Address Bilbao
 Yard No. 334 Electric Light Installation fitted by J. CHARTERS, GLASGOW When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting enclosed forced lubrication engine coupled direct to single pedestal bearing open type dynamo.

Capacity of Dynamo 60 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Engine Room Starboard Whether single or double wire system is used Double wire Sys.
 Position of Main Switch Board Beside 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 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 Copper & Tin 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 S.W.G. and Admiralty Standard 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 123 @ 30 watts, 6 @ 32 cp., 1 Morse Lamp & W/T Installation arranged in the following groups:—

A <u>Pump Rooms</u>	<u>20</u> lights each of <u>30 watts</u>	<u>XX @ 32</u> candle power requiring a total current of <u>6.0</u> Amperes
B <u>Masthead & Fore</u>	<u>51</u> lights each of <u>30 watts</u>	<u>1 @ 32</u> candle power requiring a total current of <u>15.4</u> Amperes
C <u>Navigation</u>	<u>7</u> lights each of <u>30 watts</u>	<u>5 @ 32</u> candle power requiring a total current of <u>7.7</u> Amperes
D <u>Engine Room & Aft</u>	<u>50</u> lights each of <u>30 watts</u>	candle power requiring a total current of <u>15.0</u> Amperes
E <u>Wireless</u>	<u>✓</u> lights each of <u>✓</u>	candle power requiring a total current of <u>10.0</u> Amperes
<u>2</u> Mast head lights with <u>2</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2.24</u> Amperes	
<u>2</u> Side lights with <u>2</u> lamps each of <u>32</u>	candle power requiring a total current of <u>2.24</u> Amperes	
<u>ONE</u> Cargo light of <u>80</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 Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying <u>60</u> Amperes, comprised of <u>19</u> wires, each <u>16</u> S.W.G. diameter, <u>.06</u> square inches total sectional area
Branch cables carrying <u>15.4</u> Amperes, comprised of <u>7</u> wires, each <u>18</u> S.W.G. diameter, <u>.0125</u> square inches total sectional area
Branch cables carrying <u>7.7</u> Amperes, comprised of <u>3</u> wires, each <u>20</u> S.W.G. diameter, <u>.003</u> square inches total sectional area
Leads to lamps carrying <u>3</u> Amperes, comprised of <u>3</u> wires, each <u>.029</u> S.W.G. diameter, <u>.002</u> square inches total sectional area
Cargo light cables carrying <u>2.8</u> Amperes, comprised of <u>140</u> wires, each <u>36</u> S.W.G. diameter, <u>.0018</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors insulated with one coat Pine and two coats vulcanising India Rubber, tapes, the whole vulcanised together and lead covered — 600 Ω Cma cables and Admiralty Pattern 25H in the accommodation.

Joints in cables, how made, insulated, and protected None

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 In engine room, boiler room, Pump rooms, up masts, along trunk deck cables run in screwed galvanised tubing elsewhere exposed

Note All cables are lead covered.

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 *Tubing + Lead covering*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Tubing + L.C.*

What special protection has been provided for the cables near boiler casings *Tubing + Lead covering*

What special protection has been provided for the cables in engine room *Tubing + Lead covering*

How are cables carried through beams *where L.C. lead bushed holes* through bulkheads, &c. *in A.P. w/ glands or Tubing*

How are cables carried through decks *Tubing or Deck Tubes*

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

If so, how are they protected *Tubing*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *Stores*

If so, how are the lamp fittings and cable terminals specially protected *Guarded Fittings*

Where are the main switches and fuses for these lights fitted *in the spaces (switches only)*

If in the spaces, how are they specially protected *fitted in safe positions*

Are any switches or fuses fitted in bunkers *No. Not in pump room*

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 *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 *Yes*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Air tight fittings*

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.

J. Charters

Electrical Engineers

Date *2nd March '21.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *148'*

Distance between dynamo or electric motors and steering compass *152'*

The nearest cables to the compasses are as follows:—

Cable	Ampere	Distance from standard compass	Distance from steering compass
A cable carrying <i>4.7</i>	<i>6</i>	<i>5 1/2</i> feet	<i>5 1/2</i> feet
A cable carrying <i>15.4</i>	<i>20</i>	<i>18</i> feet	<i>18</i> feet
A cable carrying <i>2</i>	<i>in</i>	<i>in</i> feet	<i>in</i> feet

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.

Robert Duncan & Co. Ltd.

Builder's Signature.

Date *12th March 1921*

GENERAL REMARKS.

Material and workmanship good.
The installation is fitted in accordance with the Society's rules.
and on completion was examined & tested at work under full power & found
satisfactory.
It is submitted that
this vessel is eligible for

Kilowatts: *6.*

Fee: *£6:0:0.*

applied for 16/3/21
received 18/3/21

THE RECORD

Elec. Lt
Recd 2/4/21

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW. 22 MAR 1921

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.