

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17786

Port of Greenock. Date of First Survey 2nd Feb, 1921 Date of Last Survey 2nd March, 1921 No. of Visits 10
 No. in Reg. Book on the Iron or Steel S.S. "GOBEO." Port belonging to Bilbao.
 Built at Port-Glasgow. By whom Robert Duncan & Co. Ltd When built 1921.
 Owners Comp. Contrabica 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 8wp.
 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 @ 32cp, 1 Morse Lamp + W/T Installation arranged in the following groups:—

Group	Description	Watts	Candle Power	Current (Amperes)
A	Pump Rooms 2 lights each of 30 watts	60	22 @ 32	6.0
B	Masthead & Fore 51 lights each of 30 watts	1530	1 @ 32	15.4
C	Navigation 7 lights each of 30 watts + 5 @ 32	245		7.7
D	Engine room 50 lights each of 30 watts	1500		15.0
E	Wireless lights each of			10.0
	2 Mast head lights with 2 lamps each of 32	64		2.24
	2 Side lights with 2 lamps each of 32	64		2.24
	ONE Cargo light of 80	80		meandescant.

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

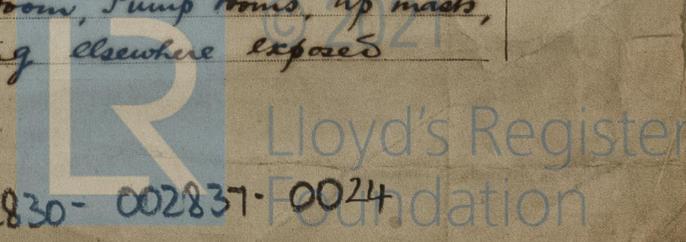
Joints in cables, how made, insulated, and protected None.

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. & T. 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:—

A cable carrying	<u>4.7</u> Amperes	<u>6</u> feet from standard compass	<u>5½</u> feet from steering compass
A cable carrying	<u>15.4</u> Amperes	<u>20</u> feet from standard compass	<u>18</u> feet from steering compass
A cable carrying	<u>.2</u> Amperes	<u>in</u> feet from standard compass	<u>in</u> 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 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 THE RECORD.

Kilowatts: 6.
 Fee: £6:0:0.
 applied for 16/3/21.
 received 17/3/21
Graham Robertson
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW. 22 MAR 1921
Elec. Light.



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.