

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1469

Port of *Barrow-in-Furness*. Date of First Survey *14th Jan^y* Date of Last Survey *4th Feb^y* No. of Visits *9*.
 No. in Reg. Book on the *Iron or Steel* *Terra-Concrete* s/s "*Armistice*" Port belonging to *London*
 Built at *Barrow-in-Furness* By whom *Terra-Concrete Ship Bldg Co.* When built *1919*
 Owners *Terra-Concrete Ship Construction Co. Ltd.* Owners' Address *Leopold Walford (London) Ltd.*
 Yard No. *99* Electric Light Installation fitted by *J. H. Holmes & Co. Newcastle-on-Tyne* When fitted *1919*.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 5½ x 5. Open Vertical Single Cylinder Engine coupled to one to 12/5 w. Open Type Dynamo by J. H. Holmes & Co.
 Capacity of Dynamo *65* Volts, whether continuous or alternating current *Continuous*
 Where is Dynamo fixed *In Engine Room.* Whether single or double wire system is used *Double.*
 Position of Main Switch Board *Near 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 *1-4 way 5 amp. Switch fixed in wheelhouse 1-4 way 5 amp. Switch fixed in Main House. 1-6 way 5 amp. Switch fixed in Passage. 1-3 way 5 amp. Switch fixed in Engine Room. 1-3 way 5 amp. Switch fixed in Engine Room.*
 If cut outs 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 cessel 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 *Yes.* and constructed to fuse at an excess of *100* per cent over the normal current
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes.*
 Total number of lights provided for *62* arranged in the following groups:—

Group	Number of lights	Candle power	Current (Amperes)
A	11	16	10.4
B	24	16	13.5
C	8	16	4.5
D	15	16	8.5
E	Spare		
1	Mast head light with 1 lamp each of 32	32	1.12
2	Side light with 1 lamp each of 32	32	2.24
3	Cargo lights of 5 x 16	16	Incandescent

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

Where are the switches controlling the masthead and side lights placed *In Wheel House*

DESCRIPTION OF CABLES.

Main cable carrying *63* Amperes, comprised of *4* wires, each *16* L.S.G. diameter, *.06* square inches total sectional area
 Branch cables carrying *10.4* Amperes, comprised of *4* wires, each *18* L.S.G. diameter, *.012* square inches total sectional area
 Branch cables carrying *3.5* Amperes, comprised of *4* wires, each *18* L.S.G. diameter, *.012* square inches total sectional area
 Leads to lamps carrying *.56* Amperes, comprised of *1* wires, each *18* L.S.G. diameter, *.008* square inches total sectional area
 Cargo light cables carrying *2.8* Amperes, comprised of *3* wires, each *20* L.S.G. diameter, *.003* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

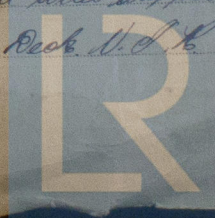
All conductors are formed of H. C. Tinned Copper Wires Insulated with Pure Para Rubber. & Vulcanized Rubber & Taped & Braided overall.

Joints in cables, how made, insulated, and protected *None (Looping in system)*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *None.* 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 *None.*

Are there any joints in or branches from the cable leading from dynamo to main switch board *None.*

How are the cables led through the ship, and how protected *In accommodation lead covered wires clipped to wall bases. In Deck U.S.G. lead covered wires clipped to wall bases.*



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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 covered on Main & Pipe*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armaured & Braided*

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

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

How are cables carried through beams *Bushed with Lead* through bulkheads, &c. *Stuffing Glands*

How are cables carried through decks *In Lead on Iron Flanged Pipes made Watertight*

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

If so, how are they protected *✓*

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 *here.*

Are any switches or cut outs fitted in bunkers *none.*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *W. F. Hooker's*

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 *✓* supplied with a voltmeter and *✓* an amperemeter, fixed *on Main Board*

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 *✓*

IN ACCORDANCE WITH RECOMMENDING STANDARDS COMMITTEE'S STANDARDS

The copper used is guaranteed to have a conductivity of *100* 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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *Approx 52 ft.*

Distance between dynamo or electric motors and steering compass *Approx 44 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	Distance from standard compass	Distance from steering compass
56	Amperes	Inside	Inside
104	Amperes	Approx 15	Approx 11
135	Amperes	40	35

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 *all* course in the case of the standard compass and *Nil* degrees on *all* course in the case of the steering compass.

FOR THE FERRO CONCRETE SHIP CONSTRUCTION CO., LTD.

Atiley manager. Builder's Signature. Date *17th Feb 1919*

GENERAL REMARKS.

This installation has been efficiently fitted on board, & on completion the engine & dynamo were tried under full load & found satisfactory.

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

W.D. 24/2/19.

John Houston Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

FRI. 7 MAR. 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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