

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9657

Port of Middlesbrough Date of First Survey ad Date of Last Survey while building No. of Visits  
 No. in on the Iron or Steel S.S. BEECHLEAF Port belonging to  
 Reg. Book Built at Stockton-on-Tees By whom Messrs Richardson Duck & Co When built  
 Owners Owners' Address  
 Yard No. 649 Electric Light Installation fitted by Messrs Falconer Cross & Co When fitted 1917

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine type Engin with forced lubrication by Allen Jones & Co  
Compound wound dynamo  
 Capacity of Dynamo 250 Amperes at 105 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Middle Platform after end 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.F.G.H.I. of lights, &c., as below  
 Positions of auxiliary <sup>fuse</sup> boards and numbers of <sup>fuses</sup> switches on each 1 x 3 + 1 x 8 Way in Foreman's Passage  
1 x 12 Way in Blackroom, 1 x 6 + 1 x 9 Way in Starboard Passage Midships  
1 x 3 + 1 x 11 Way in Passage aft 1 x 9 Way in Engine Room  
 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 25 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 242 arranged in the following groups:—

A	54	lights each of	16	candle power requiring a total current of	18.6	Amperes
B	30		16		13.2	
C	62	lights each of	16	candle power requiring a total current of	23	Amperes
D	56		16		22.2	
E	42	lights each of	16	candle power requiring a total current of	17	Amperes
F	Machinists' Room				50	
G	Wheels	lights each of		candle power requiring a total current of	2.5	Amperes
H	Pump				50	
I	Refinery	lights each of		candle power requiring a total current of	50	Amperes
	2 Mast head lights, with	1 lamps each, of	32	candle power requiring a total current of	2.4	Amperes
	2 Side lights, with	1 lamps each, of	32	candle power requiring a total current of	2.4	Amperes
	6 Cargo lights of	8 + 50		candle power, whether incandescent or arc lights	Incandescent	
	2 arcs					

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

Where are the switches controlling the masthead and side lights placed Blackroom

## DESCRIPTION OF CABLES.

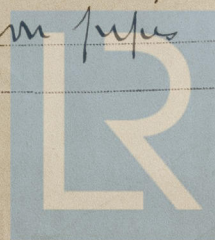
Main cable carrying 250 Amperes, comprised of 61 wires, each 14 S.W.G. diameter, .3 square inches total sectional area  
 Branch cables carrying 80 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 50 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .06 square inches total sectional area  
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 14.4 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .017 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure Para rubber, Vulk. S.R. taped, braided & compounded  
Lead covered in cabins, Lead covered & armoured in Machinery spaces

Joints in cables, how made, insulated, and protected

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances Yes 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 Yes

Are there any joints in or branches from the cable leading from dynamo to main switch board YesHow are the cables led through the ship, and how protected Lead covered in Iron tubes

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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Generally*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead covered - Armoured*

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

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

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

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

How are cables carried through decks *Deck tubes*

Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*

If so, how are they protected *Lead covered + Armoured*

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

If so, how are the lamp fittings and cable terminals specially protected *Special G.I. covers*

Where are the main switches and fuses for these lights fitted *On deck*

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 *W. J. sockets*

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 *In Main Board*

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 *Gas 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 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.

*Falconer, Cross & Co.*

Electrical Engineers

Date *March 14 1917*

COMPASSES.

Distance between dynamo or electric motors and standard compass *224 ft*

Distance between dynamo or electric motors and steering compass *224 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
15	10	12	
6	1	1	

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 RICHARDSON, DUCK & CO. LTD.

*E. Robson*

Builder's Signature.

Date *March 16<sup>th</sup> 1917*

GENERAL REMARKS.

*This installation has been fitted in accordance with the Rules and on completion was tested under full working conditions and all found satisfactory. The vessel is fitted with "Wireless"*

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

*W. Morrison*

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

Committee's Minute

FRI. 9-MAY. 1919

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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