

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11008

Port of Middlesbrough Date of First Survey 11th Nov. 1920 Date of Last Survey 4 April 21 No. of Visits 24  
 No. in Reg. Book 82322 on the ~~Steel~~ 4 1/2 "Virginia Peirce" Port belonging to haples.  
 Built at Haverton Hill - on Tees By whom H. W. W. Shipbuilding Co. Ltd. When built 1921  
 Owners Peirce Bros. Owners' Address ✓  
 Yard No. 5 Electric Light Installation fitted by H. W. W. Shipbuilding Co. When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Dynamo, Open type, compound wound, Sunderland Forge Coy N° 26662  
 Engine, " " single cylinder " " " " 26562  
 Capacity of Dynamo 85 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Main engine room, stbd side 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 <sup>FUSE</sup> switch boards and numbers of switches on each "A" Chart House (8 switches), "B" Saloon Pantry,  
"C" Engine room entrance, "D" Crew Spec aft, "E" Engine room.

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary <sup>FUSE</sup> switch board to the cables of auxiliary circuits Yes and at each position where a cable is branched or reduced in size none and to each lamp circuit Yes  
 If cessel 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 50 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 153 arranged in the following groups :-

Group	Description	Number of Lights	Wattage / Candle Power	Total Current	Notes
A	Navigation	5	each of 32 (including Morse)	6.5 Amperes	
B	Accommodation	63	each of 30 watt M.F.	15 Amperes	
C	Crew aft	33	each of 16	19.8 Amperes	
D	Engine room	17	each of 200 watt 16 cp.	16.2 Amperes	
E	Clusters	27	each of 16	15 Amperes	
	2 Mast head light with 1 lamps each of	2	32	included in 'A'	Amperes
	2 Side light with 1 lamps each of	2	32	" " "	Amperes
	5 Cargo lights of	5	80	candle power, whether incandescent or arc lights	incandescent

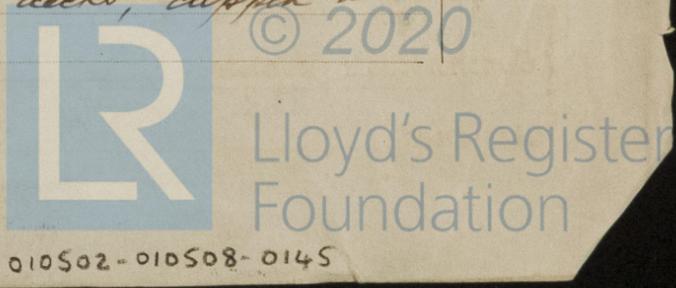
If arc lights, what protection is provided against fire, sparks, &c. ✓  
 Where are the switches controlling the masthead and side lights placed Chart House

## DESCRIPTION OF CABLES.

Main cable carrying 85 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 19.8 Amperes, comprised of 19 wires, each .052 S.W.G. diameter, .058 square inches total sectional area  
 Branch cables carrying 16.2 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .025 square inches total sectional area  
 Leads to lamps carrying 2 Amperes, comprised of 3 wires, each .0290 S.W.G. diameter, .002 square inches total sectional area  
 Cargo light cables carrying 3 Amperes, comprised of 7 wires, each .036 S.W.G. diameter, .004 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered cables used in cabins, saloon, etc.  
 Armoured + braided cables used in tween decks, engine room + all exposed positions  
 Joints in cables, how made, insulated, and protected Porcelain extensions, protected by cast iron covers where necessary.  
 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 no.  
 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 Through beams in tween decks, clipped to under-side of deck - protected by being armoured.



**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *Yes, except when tween decks are packed full of cargo.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Iron pipes fitted to deck lights in open alleyways.*

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

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 used for lead covered cables through bulkheads, &c. Watertight glands*

How are cables carried through decks *Iron deck pipes*

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

If so, how are they protected *Armoured cable used*

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

If so, how are the lamp fittings and cable terminals specially protected *cast iron covers hinged to fittings*

Where are the main switches and fuses for these lights fitted *Saloon pantry*

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 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 */*

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 *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.

FURNESS SHIPBUILDING CO. LIMITED

*P.S. Glover*

Electrical Engineers

Date *14.4.21.*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *150 ft approx*

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

The nearest cables to the compasses are as follows:—

A cable carrying	<i>.3</i>	Amperes	<i>inside</i>	feet from standard compass	<i>3</i>	feet from steering compass
A cable carrying	<i>6.5</i>	Amperes	<i>15</i>	feet from standard compass	<i>10</i>	feet from steering compass
A cable carrying	<i>—</i>	Amperes	<i>—</i>	feet from standard compass	<i>—</i>	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 *all* courses in the case of the standard compass and *nil* degrees on *all* courses in the case of the steering compass.

*J. M. Govern*

Builder's Signature.

Date *14<sup>th</sup> April 1921*

**GENERAL REMARKS.**

Director.

*This installation has been efficiently fitted on board and proved satisfactory under working conditions.*

It is submitted that

*Yes £ 8-10-0* this vessel is eligible for *Electric Light*

*Applied for 27.4.21*

*Well 27/4/21*

*Wm Cowie*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. APR. 29 1921*



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