

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 34386

Port of Glasgow Date of First Survey 12<sup>th</sup> Oct 1910 Date of Last Survey 31-12-14 No. of Visits 19  
 No. in Reg. Book on the Iron & Steel S. S. "PHILOTIS" Port belonging to Glasgow  
 Built at Anderson By whom Anderson S. B. Co. No. 269 When built 1918  
 Owners J. & P. Hutchison Ltd. Owners' Address Glasgow  
 Yard No. 269 Electric Light Installation fitted by James Espley & Co When fitted Engine Room.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 5½" x 5" Open type vertical engine, coupled direct on combined bed plate to Compound wound dynamo. running at 400 rev. pr. minute —  
 Capacity of Dynamo 45 Amperes at 100 Volts, whether continuous or alternating current  
 Where is Dynamo fixed in Engine Room Whether single or double wire system is used double wire  
 Position of Main Switch Board on Starting Platform having switches to groups A B C D E of lights, &c., as below  
 Positions of auxiliary fuse boards and numbers of switches on each Chart Room One 6 way D.P. One 4 way D.P. Engine Room One 6 way D.P.

If fuses are fitted on main switch board to the cables of main circuit no 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 100 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 108 arranged in the following groups:—

A Forward	9	lights each of	Metal filament	16	candle power requiring a total current of	1.8	Amperes
B Midships	10	lights each of	" "	16	candle power requiring a total current of	2 -	Amperes
C Engine & Boiler	31	lights each of	" "	16	candle power requiring a total current of	6.2	Amperes
D Aft	22	lights each of	" "	16	candle power requiring a total current of	4.4	Amperes
E Cargo Chockers	4	lights each of	Carbon lamps	108	candle power requiring a total current of	18 -	Amperes
One Mast head light with	one	lamps each of		32	candle power requiring a total current of	1.2	Amperes
Two Side light with	one	lamps each of		32	candle power requiring a total current of	2.4	Amperes
Four Cargo lights of	eight lamps in each			16	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 On Bridge

## DESCRIPTION OF CABLES.

Main cable carrying	36	Amperes, comprised of	7	wires, each	14	S.W.G. diameter,	.0352	square inches total sectional area
Branch cables carrying	18	Amperes, comprised of	7	wires, each	21	S.W.G. diameter,	.0056	square inches total sectional area
Branch cables carrying	6.8	Amperes, comprised of	7	wires, each	21	S.W.G. diameter,	.0056	square inches total sectional area
Leads to lamps carrying	2	Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	4.5	Amperes, comprised of	108	wires, each	.006	S.W.G. diameter,	.003	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure vulcanized rubber, taped and armoured with gal. steel wire and braided overall.

Joints in cables, how made, insulated, and protected There are no joints in any cables, all cables run direct to distribution boxes, and looped from light to light — the only joints are the sweating lugs at Switch Board & Dynamo cables.

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 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 Under Main Deck, along side Telegraph. Gal. steel wire.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except in Hold or Coal Bunkers*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *gal. steel tubing*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *gal. steel armoured wires*

What special protection has been provided for the cables near boiler casings *gal. steel armoured wires*

What special protection has been provided for the cables in engine room *gal. steel armoured wires*

How are cables carried through beams *through lead ferrules* through bulkheads, &c. *brass watertight glands*

How are cables carried through decks *through gal. steel tubing, standing at least 12" above deck*

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 *gal. steel armoured wires*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *none*

If so, how are the lamp fittings and cable terminals specially protected *none*

Where are the main switches and fuses for these lights fitted *none*

If in the spaces, how are they specially protected *none*

Are any switches or fuses fitted in bunkers *none*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *none*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *none*

How are the returns from the lamps connected to the hull *none*

Are all the joints with the hull in accessible positions *yes*

Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes*, fixed *Switch 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 *yes*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *none*

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.

*James Espe*

Electrical Engineers

Date *21st Jan. 1918*

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 ft*

Distance between dynamo or electric motors and steering compass *100 ft*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>18</i>	<i>10</i>	<i>10</i>	<i>10</i>
<i>6.8</i>	<i>10</i>	<i>10</i>	<i>10</i>
<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>

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 *0.1* degrees on *0.1* course in the case of the *standard compass and* *0.1* degrees on *0.1* course in the case of the steering compass.

FOR AND ON BEHALF OF THE ADDRESSER BY DOCK & SHIPBUILDING COY. LTD.

*James Espe* Managing Director.

Builder's Signature.

Date *24/1/18*

GENERAL REMARKS.

*The installation has been fitted on board in accordance with the Rules of the Society & has been tried under full working conditions with satisfactory results.*

*It is submitted that this vessel is eligible for*

THE RECORD. *Elec. light. JWD 3/1/18. JLM*

*Fred. A. Ferguson*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW. 29 JAN 1918*

*Elec. Light*



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