

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17726

Port of Grunwick Date of First Survey 1<sup>st</sup> Sept 1920 Date of Last Survey 28<sup>th</sup> Oct 1920 No. of Visits 23  
 No. in Reg. Book on the Iron or Steel S.S. 'STAUR' Port belonging to Christiania  
 Built at Grunwick By whom Grunwick Dockyard & Co Ltd When built 1920  
 Owners Fearnley and Egan Owners' Address Christiania  
 Yard No. 400 Electric Light Installation fitted by H.T. Boothroyd Ltd. When fitted 1920.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

By Clarke, Chapman of Gateshead on Tyne. Single cylinder open type 6 1/2" x 6" engine  
 direct coupled to compound wound dynamo multipolar type. 100 lbs. pressure per square inch.

Capacity of Dynamo 100 Amperes at 100 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 Five of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each None Fitted.

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 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 184 arranged in the following groups:—

A	31	lights each of	16	candle power requiring a total current of	15	Amperes		
B	34	lights each of	16	candle power requiring a total current of	17	Amperes		
C	22	lights each of	16	candle power requiring a total current of	11	Amperes		
D	37	lights each of	16	candle power requiring a total current of	19	Amperes		
E	✓	lights each of	✓	candle power requiring a total current of	✓	Amperes		
	2	Mast head light with	1	lamps each of	32	candle power requiring a total current of	2.25	Amperes
	2	Side light with	1	lamps each of	32	candle power requiring a total current of	2.25	Amperes
	60	Cargo lights of	10 - 6	lt. of	16	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. No Arcs Fitted.

Where are the switches controlling the masthead and side lights placed In Chart Room.

## DESCRIPTION OF CABLES.

Main cable carrying	100	Amperes, comprised of	19	wires, each	14	S.W.G. diameter, .094	square inches total sectional area
Branch cables carrying	15	Amperes, comprised of	7	wires, each	20	S.W.G. diameter, .007	square inches total sectional area
Branch cables carrying	19	Amperes, comprised of	7	wires, each	18	S.W.G. diameter, .0125	square inches total sectional area
Leads to lamps carrying	1/2	Amperes, comprised of	1	wires, each	18	S.W.G. diameter, .0018	square inches total sectional area
Cargo light cables carrying	5	Amperes, comprised of	3	wires, each	20	S.W.G. diameter, .003	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

V.I.P. taped, lead covered cables, and where exposed in machinery spaces and etc. armoured over the lead with galv. steel wire armour, and where necessary further protected in Steel tubing.

Joints in cables, how made, insulated, and protected No joints except mechanical ones.  
 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 No.  
 How are the cables led through the ship, and how protected Lead covered and armoured and efficiently clipped.

**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 and armoured and where necessary in wrought iron tubing.

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

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 Lead and Fibre Bushes. through bulkheads, &c. Watertight Glands.

How are cables carried through decks Watertight Deck Tubes.

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

How are they protected As described above

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 Specially guarded fittings.

Where are the main switches and fuses for these lights fitted In Engine Room.

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 To Watertight Connectors.

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.

H. T. BOOTHROYD (PORT-GLASGOW) LTD.  
*J. W. Hitchhead*  
 MANAGING DIRECTOR & SECRETARY.

Electrical Engineers

Date 19th Oct. 1920.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass About 112 feet.

Distance between dynamo or electric motors and steering compass About 160 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	In Instrument	feet from standard compass	In Instrument	feet from steering compass
A cable carrying	1	10	6	6	feet from steering compass
A cable carrying	1	10	10	10	feet from steering compass
A cable carrying	2	10	10	10	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power Yes

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.

THE GREENOCK DOCKWARD CO., LTD.

Builder's Signature.

Date

**GENERAL REMARKS.**

The above installation has been fitted in a satisfactory manner. The materials and workmanship employed, as far as can be seen, are sound and good, and found satisfactory on test.

It is submitted that this vessel is eligible for THE REGISTER.

*M. Law*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Glasgow - 2 NOV 1920

Elec. Light *gn*



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.