

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 83108.

Port of LiverpoolDate of First Survey October 31<sup>st</sup>Date of Last Survey November 30<sup>th</sup>No. of Visits 5No. in on the ~~Iron~~ Steel

Reg. Book

36780

Built at

Garston

Port belonging to

Liverpool

By whom

H. & C. Grayson LtdWhen built 1921Owners Municipal Corporation of Birkenhead

Owners' Address

Yard No. 119

Electric Light Installation fitted by

Campbell & Isherwood Ltd.When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Main Generating set comprising Open Vertical, Single Cylinder, Engine direct coupled to 4 pole compound wound Dynamo, both mounted upon cast iron bedplate. One similar set as Auxiliary.

Capacity of Dynamo Main 125 Amperes at 60 Volts, whether continuous or alternating current continuousWhere is Dynamo fixed Auxiliary in 50 in Engine roomWhether single or double wire system is used doublePosition of Main Switch Board in Engine roomhaving switches to groups four main switches of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine Room port side 4 switches. Engine Room - Starboard side 4 switches. Bridge Wheelhouse 10 switches.

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 equivalent 106-16 CP arranged in the following groups:—

A Port side	26 lights each of	16	candle power requiring a total current of	10	Amperes
B Starboard side	26 lights each of	16	candle power requiring a total current of	10	Amperes
C Navigation	6 lights each of	16	candle power requiring a total current of	4.2	Amperes
D	lights each of		candle power requiring a total current of		Amperes
E	lights each of		candle power requiring a total current of		Amperes
/ Mast head light with / lamps each of					
		32	candle power requiring a total current of	1.3	Amperes
2 Side light with / lamps each of					
		32	candle power requiring a total current of	2.6	Amperes
4 Cargo lights of					
		768	candle power, whether incandescent or arc lights	incandescent	

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

Where are the switches controlling the masthead and side lights placed Bridge Wheelhouse

## DESCRIPTION OF CABLES.

Main cable carrying	60 Amperes, comprised of	19 wires, each	15 S.W.G. diameter, .0750	square inches total sectional area
Branch cables carrying	20 Amperes, comprised of	7 wires, each	16 S.W.G. diameter, .0221	square inches total sectional area
Branch cables carrying	10 Amperes, comprised of	7 wires, each	18 S.W.G. diameter, .0125	square inches total sectional area
Leads to lamps carrying	1 Amperes, comprised of	3 wires, each	22 S.W.G. diameter, .0018	square inches total sectional area
Cargo light cables carrying	6 Amperes, comprised of	7 wires, each	22 S.W.G. diameter, .0042	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

V.I.R. cables in heavy gauge, galvanized, screwed conduit throughout the vessel.

Joints in cables, how made, insulated, and protected No joints

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

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 in heavy gauge, galvanized, screwed conduit.



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 h. g. galvanised conduit

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 ditto through bulkheads, &c. glands

How are cables carried through decks usual deck tubes 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 fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers No

bladder Cargo light cables, whether portable or permanently fixed permanently How fixed On strong iron tube brackets

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 Main 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.

CAMPBELL & ISHERWOOD, LTD

Electrical Engineers

Date Nov./1921.

COMPASSES.

Distance between dynamo or electric motors and standard compass 50 feet

Distance between dynamo or electric motors and steering compass 50 feet

The nearest cables to the compasses are as follows:—

A cable carrying 5 Amperes 4 feet from standard compass 4 feet from steering compass

A cable carrying Amperes feet from standard compass feet from steering compass

A cable carrying Amperes feet from standard compass feet from steering compass

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

The maximum deviation due to electric currents, etc., was found to be degrees on course in the case of the

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

J. & C. GRAYSON, LIMITED

Builder's Signature. Date

GENERAL REMARKS.

MANAGER

The electric lighting installation of this vessel is in accordance with the Rules and when tried under working conditions at full load was found satisfactory in every respect. In my opinion, it is eligible to be recorded in the Register Book.

Fee £11.0.0

pd 28/1/22

LIVERPOOL

16 DEC 1921

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Electric Light.



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.