

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2891

Port of Liverpool Date of First Survey March 24th Date of Last Survey October 21st 1921 No. of Visits Four
 No. in on the Iron or Steel SS barpio Port belonging to London
 Reg. Book 11595 Built at Garston By whom Messrs Ark. Grayson Ltd When built 1921
 Owners Messrs MacAndrews & Co Ltd Owners' Address _____
 Yard No. 110 Electric Light Installation fitted by Messrs Campbell & Isherwood Ltd When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Open, vertical, single cylinder type engine, direct coupled to a protected type, 4 pole compound wound dynamo 72 Kilo 100V 350 Revs mounted on cast iron baseplate.
 Capacity of Dynamo 75 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 Eng. room bottom platform having switches to groups four of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each engine room 8 switches
Chart room 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 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 144 arranged in the following groups:—

A Engine room, etc	34 lights each of	16 candle power requiring a total current of	23.5 Amperes
B Midship Accom, etc	20 lights each of	16 candle power requiring a total current of	14 Amperes
C Navigation	15 lights each of	16 candle power requiring a total current of	10.5 Amperes
D Saloon Accom,	24 lights each of	16 candle power requiring a total current of	16.8 Amperes
E Crew Aft	16 lights each of	16 candle power requiring a total current of	11.2 Amperes
2 Mast head light with	1 lamps each of	32 candle power requiring a total current of	2.6 Amperes
2 Side light with	1 lamps each of	32 candle power requiring a total current of	2.6 Amperes
Four	Cargo lights of	280 candle power, whether incandescent or are 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 Chart room

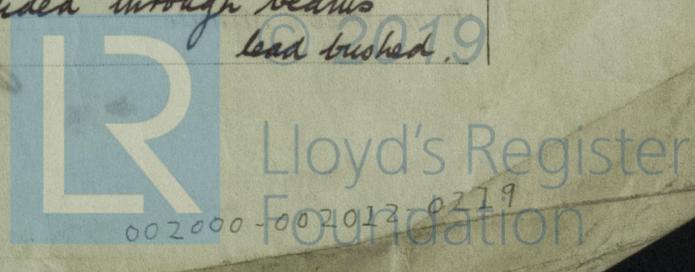
DESCRIPTION OF CABLES.

Main cable carrying	70 Amperes, comprised of	19 wires, each	15 Swg. S.W.G. diameter,	0.0750 square inches total sectional area
Branch cables carrying	25 Amperes, comprised of	7 wires, each	16 Swg. S.W.G. diameter,	0.0221 square inches total sectional area
Branch cables carrying	15 Amperes, comprised of	7 wires, each	18 Swg. S.W.G. diameter,	0.0125 square inches total sectional area
Leads to lamps carrying	1 Amperes, comprised of	3 wires, each	22 Swg. S.W.G. diameter,	0.0018 square inches total sectional area
Cargo light cables carrying	3.5 Amperes, comprised of	145 wires, each	38 S.W.G. diameter,	0.000283 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered, Armoured & braided from Main switchboard, through deck tubes in between decks feeding various Distributing boards. In Saloon + Accomodation lead covered clipped up in Crews quarters V.I.R. in h.g. Galv^d screwed tubing
 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 Lead covered, Armoured + braided through beams lead bushed.



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 Galv. tubing

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

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

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

How are cables carried through beams lead bushed holes through bulkheads, &c. Elands

How are cables carried through decks Deck tubes standing 15" above the 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 _____

If so, how are they protected lead covered, armoured, braided, clipped up every 10 inches

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.

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 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 24/10/21

COMPASSES

Distance between dynamo or electric motors and standard compass 130 ft

Distance between dynamo or electric motors and steering compass 140 ft

The nearest cables to the compasses are as follows:—

A cable carrying <u>1</u> Amperes <u>20</u> feet from standard compass	<u>6</u> feet from steering compass
A cable carrying <u>6</u> Amperes <u>20</u> feet from standard compass	<u>15</u> feet from steering compass
A cable carrying <u>220</u> Amperes <u>20</u> feet from standard compass	<u>21</u> 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 2.8 degrees on 2.8 course in the case of the standard compass and _____ degrees on _____ course in the case of the steering compass.

Builder's Signature. Date 25/10/21

GENERAL REMARKS.

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

Submitted that this vessel is eligible for THE RECORD. Elec. Light. L. G. Deford & J. M. Dykes. Surveyor to Lloyd's Register of Shipping. 29/10/21

Committee's Minute LIVERPOOL. 25 OCT 1921
Electric Light.

2nd. 11. 19.—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN

