Rpt. 13.

Received at London Office WED. AUG. 11 1920

REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of _____ Date of First Survey _____ Date of Last Survey _____ No. of Visits 1095

No. in Reg. Book 22208 on the ~~Iron~~ Steel ½" Fullagar Port belonging to Liverpool

Built at Birkenhead By whom Mess Cammell Laird & Co When built 1920

Owners J. & J. Brocklebank Ltd. Owners' Address _____

Yard No. 882 Electric Light Installation fitted by Mess Cammell Laird & Co When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

3·5 K.W. by Messrs Russel Newberry & Co Paraffin driven engine (blow lamp start) direct coupled to compound wound dynamo

Capacity of Dynamo 35 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 adjacent to dynamo having switches to groups 2 in No. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each none

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 75 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 67 arranged in the following groups :—

A 32 lights each of 25 & 16 candle power requiring a total current of 11·9 Amperes

B 35 lights each of 25 & 16 candle power requiring a total current of 12·2 Amperes

C 1 Motor ~~lights each~~ of 2·0. B.H.P. ~~candle power~~ requiring a total current of 20. 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 — candle power requiring a total current of _____ Amperes

— Side light with — lamps each of — candle power requiring a total current of _____ Amperes

2 Cluster Cargo lights of 6 lamps, each 16 candle power, whether incandescent or arc lights incandescent.

If arc lights, what protection is provided against fire, sparks, &c. none fitted

Where are the switches controlling the masthead and side lights placed No electric sailing lights fitted

DESCRIPTION OF CABLES.

Main cable carrying 24 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, ·0125 square inches total sectional area

Branch cables carrying 12 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, ·0074 square inches total sectional area

Branch cables carrying 6 Amperes, comprised of 7 wires, each 22 S.W.G. diameter, ·0042 square inches total sectional area

Leads to lamps carrying 4 Amperes, comprised of 3 wires, each 22 S.W.G. diameter, ·0018 square inches total sectional area

Cargo light cables carrying _____ Amperes, comprised of _____ wires, each _____ S.W.G. diameter, _____ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables of 600 Megohm C.M.A. Grade Lead covered and armoured and braided in Engine Spaces. Lead covered and run in galv. steel tubes through Cargo Space & V.I.R. run in wood casing in Accommodation

Joints in cables, how made, insulated, and protected None

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 galvanised steel tubing and in wood casing

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible No, Some cables run through Cargo Space

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered wire run in galvanised steel tubing

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

What special protection has been provided for the cables near boiler casings Lead covered armoured cable fitted

What special protection has been provided for the cables in engine room Lead covered armoured cable fitted

How are cables carried through beams in Lead bushes *through bulkheads, &c.* in W.T. Glands

How are cables carried through decks in W.T. Deck tubes

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

If so, how are they protected Lead covered wire, run in galvanised steel tubing

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* 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.

CAMMELL LAIRD AND COMPANY LIMITED.

J. W. P. Lamond *Electrical Engineers* *Date* 4 MAY 1920

LOCAL SECRETARY.

COMPASSES.

Distance between dynamo or electric motors and standard compass 74 feet

Distance between dynamo or electric motors and steering compass 42 feet

The nearest cables to the compasses are as follows:—

A cable carrying 12 *Amperes* 10 *feet from standard compass* 32 *feet from steering compass*

A cable carrying .6 *Amperes* 1 *feet from standard compass* 82 *feet from steering compass*

A cable carrying .6 *Amperes* 82 *feet from standard compass* 1 *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* — *course in the case of the standard compass and* — *degrees on* — *course in the case of the steering compass.*

CAMMELL LAIRD AND COMPANY LIMITED.

J. W. P. Lamond *Builder's Signature.* *Date* 4 MAY 1920

LOCAL SECRETARY.

GENERAL REMARKS.

This Electric Light installation has now been fitted on board and is in accordance with the rules. & when tried under full working conditions was found Satisfactory in every respect & Eligible, in my opinion, for notification "Electric Light."

It is submitted that this vessel is eligible for THE RECORD. Elec Lt Bell 6/10/20

Sydney L.H. Collinson.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL 10 AUG 1920

Electric Light.

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1m,7/19.—Transfer. LR-FAF-TE7-60