

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27358

Port of Hull. Date of First Survey Mar 20<sup>th</sup> Date of Last Survey Mar 28/14 No. of Visits 6  
 No. in on the Iron or Steel steam trawler "Maroc" Port belonging to Boulogne.  
 Reg. Book 478 Built at Selby By whom Lockhart & Co. Ltd When built 1914.  
 Owners J. Hurst Owners' Address Boulogne  
 Yard No. 544 Electric Light Installation fitted by Clarke Chapman & Co. When fitted 1914.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One single cylinder double acting open type vertical engine  
coupled to a continuous current compound wound dynamo.

Capacity of Dynamo 70 Amperes at 65 Volts, whether continuous or alternating current continuous.

Where is Dynamo fixed Engine room Whether single or double wire system is used double.

Position of Main Switch Board near dynamo having switches to groups A B & C of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Each light & group of lights  
provided with switches as required.

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 slate or porcelain.

Total number of lights provided for 69 arranged in the following groups:—

A	<u>38</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>32.7</u>	Amperes
B	<u>20</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>17.3</u>	Amperes
C	<u>11</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>9.5</u>	Amperes
D	<u>✓</u>	lights each of	<u>✓</u>	candle power requiring a total current of	<u>✓</u>	Amperes
E	<u>✓</u>	lights each of	<u>✓</u>	candle power requiring a total current of	<u>✓</u>	Amperes
<u>1</u>	Mast head light with	<u>1</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>1.7</u> Amperes
<u>2</u>	Side light with	<u>1</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>3.4</u> Amperes
<u>2</u>	Cargo lights of	<u>4-16</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c. ✓

Where are the switches controlling the masthead and side lights placed In wheel house

## DESCRIPTION OF CABLES.

Main cable carrying 70 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .09372 square inches total sectional area

Branch cables carrying 32.7 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .01695 square inches total sectional area

Branch cables carrying 9.5 Amperes, comprised of 1 wires, each 14 S.W.G. diameter, .00502 square inches total sectional area

Leads to lamps carrying 86 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area

Cargo light cables carrying 3.4 Amperes, comprised of 168 wires, each 38 S.W.G. diameter, .00502 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber taped & braided & lead covered where exposed, steel armoured

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 steel armoured cables run through hold & clipped to underside of deck with galvanized iron clips.

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## DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible

No.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture

cables.

lead covered steel armoured

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

lead covered armoured cables.

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

" " " "

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

" " " "

How are cables carried through beams

in lead bushes

through bulkheads, &amp;c.

in W.I. glands.

How are cables carried through decks

in galvanized iron tubes.

Are any cables run through coal bunkers

or cargo spaces

or spaces which may be used for carrying cargo, stores, or baggage

yes.

If so, how are they protected

lead covered steel armoured cables.

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

to W.I. connection boxes

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel

double wire system.

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

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

✓

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.

For Clarke, Chapman &amp; Co., Ltd.

Electrical Engineers

Date

April 16<sup>th</sup> 1914.

## COMPASSES.

Director.

Distance between dynamo or electric motors and standard compass

104 feet

Distance between dynamo or electric motors and steering compass

98 feet

The nearest cables to the compasses are as follows:—

A cable carrying

86

Amperes

12

feet from standard compass

6

feet from steering compass

A cable carrying

86

Amperes

6

feet from standard compass

12

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

yes.

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.

FOR COCHRANE &amp; SONS LTD.

Builder's Signature.

Date

## GENERAL REMARKS.

DIRECTOR.

This installation of electric light has been well fitted. The materials & workmanship are good. It has been tried under full working conditions & found satisfactory.

It is submitted that

this vessel is eligible for

THE RECORD. Elec. light.

J. G. Mackillop.

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.