

FRI. APR. 23 1920

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 31646

Port of Hull Date of First Survey 11/12/19 Date of Last Survey 12/2/20 No. of Visits 6  
 No. in Reg. Book on the Iron or Steel S/S APPLE BRANCH Port belonging to Sunderland  
 Built at Hull By whom Messrs. Charles & Co. Ltd. When built 1919  
 Owners Nauticus Steam Ship Co Owners' Address West Sunnyside Sunderland  
 Yard No. 637 Electric Light Installation fitted by Messrs. Charles Chapman & Co. Ltd. When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

An additional dynamo fitted 3.33  
One single cylinder double acting open type vertical engine direct coupled  
to a continuous current compound wound dynamo  
 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 A B C D & E 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 & porcelain

Total number of lights provided for 148 arranged in the following groups:—

A Engine Room 26 lights each of 16 candle power requiring a total current of 14.5 Amperes

B Balcony & forward 58 lights each of 16 candle power requiring a total current of 32.4 Amperes

C Engines & aft 34 lights each of 16 candle power requiring a total current of 19.9 Amperes

D Cargo Chutes 30 lights each of 16 candle power requiring a total current of 16.8 Amperes

E Wireless - lights each of - candle power requiring a total current of 25 Amperes

F Mast head light with 1 lamps each of 32 candle power requiring a total current of 2.2 Amperes

G Side light with 1 lamps each of 32 candle power requiring a total current of 2.2 Amperes

H Cargo lights of 6 candle power, whether incandescent or arc lights incandescent

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

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 32.4 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area

Branch cables carrying 19 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .0070 square inches total sectional area

Leads to lamps carrying 1.6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area

Cargo light cables carrying 3.3 Amperes, comprised of 168 wires, each 38 S.W.G. diameter, .0050 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized india rubber lined & braided & lead covered where exposed  
steel armoured overall

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 & armoured cables run through tween  
decks & clipped to underside of deck with strong galvanized iron clips



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? *Lead covered & steel*

*Armoured cables*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat? *Lead & 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, &c. *in W.T. glands*

How are cables carried through decks? *In galvanized iron deck plates*

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

If so, how are they protected? *Lead & 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.T. 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 *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 650 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 & Co. Ltd.

Electrical Engineers

Date *April 1<sup>st</sup> 1920*

COMPASSES.

Distance between dynamo or electric motors and standard compass *112 ft*

Distance between dynamo or electric motors and steering compass *106 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1.1</i>	<i>12</i>	<i>6</i>	<i>6</i>
<i>1.1</i>	<i>6</i>	<i>12</i>	<i>12</i>
<i>1.1</i>	<i>6</i>	<i>12</i>	<i>12</i>

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 *all* course in the case of the standard compass and *all* course in the case of the steering compass.

SHIPBUILDING & ENGINEERING CO. LIMITED.

Builder's Signature.

Date *March 21<sup>st</sup> 1920*

GENERAL REMARKS.

*The materials & workmanship are good. On completion the installation was tried under full working conditions with satisfactory results.*

ELEC. LIGHT

*well 23/4/20*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.