

April 30 1917

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# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2475.

Port of SAN FRANCISCO, Date of First Survey Dec. 15/16 Date of Last Survey Apr. 13/17 No. of Visits five  
 No. in on the ~~Iron or~~ Steel s/s "BESSA", Port belonging to Tonsberg, Norway.  
 Built at San Francisco, By whom Union Iron Works Co. When built 1917  
 Owners Norwegian Africa Australian Line, Owners' Address Tonsberg, Norway.  
 Ord. No. 139 Electric Light Installation fitted by UNION IRON WORKS COMPANY. When fitted 1917.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 - 10 k.w. General Electric Co's Dynamos direct connected to reciprocating engines.

Capacity of each Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Dynamo Room Whether single or double wire system is used double

Position of Main Switch Board near Dynamo having switches to groups \_\_\_\_\_ of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine room 8-switches. Midship house 6-switches. Captain's quarters 6-switches.

Are fuses 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

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions yes If wire fuses are used

Are the fuses of non-oxidisable metal yes and constructed to fuse at an excess of 10 per cent over the normal current

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 185 arranged in the following groups :-

<u>60</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>15</u>	Amperes
<u>85</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>21</u>	Amperes
<u>40</u>	lights each of	<u>25</u>	candle power requiring a total current of	<u>10</u>	Amperes
	lights each of		candle power requiring a total current of		Amperes
	lights each of		candle power requiring a total current of		Amperes
<u>1</u>	Mast head light with <u>2</u> lamps each of	<u>25</u>	candle power requiring a total current of	<u>1/2</u>	Amperes
<u>2</u>	Side light with <u>2</u> lamps each of	<u>25</u>	candle power requiring a total current of	<u>1</u>	Amperes
<u>17</u>	Cargo lights of	<u>125</u>	candle power, whether incandescent or arc lights	<u>incandescent</u>	

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

Where are the switches controlling the masthead and side lights placed Pilot house.

## DESCRIPTION OF CABLES.

Main cable carrying 91 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area

Branch cables carrying 21 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area

Branch cables carrying 15 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area

Cables leading to lamps carrying 1/4 Amperes, comprised of 1 wires, each \_\_\_\_\_ S.W.G. diameter, .0042 square inches total sectional area

Cables for cargo light carrying 1 1/4 Amperes, comprised of 28 wires, each \_\_\_\_\_ S.W.G. diameter, .0042 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

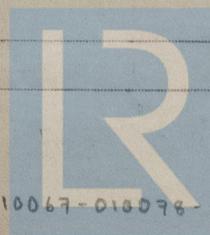
All wire rubber covered double braid in conduit.

How are the joints in cables, how made, insulated, and protected Soldered. Rubber and friction taped and painted.

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 bunks, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage no

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 conduit.



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**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 conduit.

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

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

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

How are cables carried through beams conduit. through bulkheads, &c. conduit.

How are cables carried through decks conduit.

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 conduit.

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 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.

**UNION IRON WORKS COMPANY,**

By Geo. J. Ames Electrical Engineers

Date 23rd April 1917.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 25 feet.

Distance between dynamo or electric motors and steering compass 25 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 1/4 Amperes 1 feet from standard compass 1 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 yes

The maximum deviation due to electric currents, etc., was found to be nil degrees on any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

**UNION IRON WORKS COMPANY,**

By Geo. J. Ames Builder's Signature.

Date 23rd April 1917.

**GENERAL REMARKS.** This installation has been fitted in accordance with the Rules, tested under working conditions and found in order, and the vessel is eligible in my opinion to have record of **ELECTRIC LIGHT** in the Register Book.

*It is submitted that this vessel is eligible to THE RECORD. Elec light.*

J. W. D. 24/5/17 W. Blackett + R. Batchelor Surveyors to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

New York MAY 3 1917

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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