

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2298.

Port of SAN FRANCISCO, Date of First Survey Jan. 28th Date of Last Survey Mar. 8th No. of Visits five.
 No. in Reg. Book on the Iron or Steel s/s "LA BREA", Port belonging to San Francisco.
 Built at San Francisco, By whom Union Iron Works Company. When built 1916.
 Owners Union Oil Co. of California, Owners' Address Los Angeles, California.
 Yard No. 122 Electric Light Installation fitted by Union Iron Works Company. When fitted 1916.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1 - 100 k.w. Alternating Current Generator connected to Curtis Turbine. 1-300 k.w. a.c. Generator connected to Curtis Turbine. 1-5 k.w. Direct Current Generator connected to Marine Engine.
 Capacity of Dynamo _____ Amperes at 240 Volts, ~~whether continuous or~~ alternating current yes
 Where is Dynamo fixed Engine Room Whether single or double wire system is used double & 3-wire.
 Position of Main Switch Board new Dynamos having switches to groups five of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Forecastle 6 switches. Midship house 6 switches. After Quarters 8 switches. Engine room 6 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 _____
 Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 10% 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 _____
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 275 arranged in the following groups:—

A	48	lights each of	25	candle power requiring a total current of	12	Amperes		
B	60	lights each of	25	candle power requiring a total current of	15	Amperes		
C	75	lights each of	25	candle power requiring a total current of	19	Amperes		
D	85	lights each of	25	candle power requiring a total current of	21	Amperes		
E		lights each of		candle power requiring a total current of		Amperes		
	3	Mast head light with	1	lamps each of	16	candle power requiring a total current of	1½	Amperes
	2	Side light with	1	lamps each of	16	candle power requiring a total current of	1	Amperes
	3	Cargo lights of	80	candle power, whether incandescent or arc lights			2½	

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

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

DESCRIPTION OF CABLES.

Main cable carrying 900 Amperes, comprised of 122 wires, each 15 S.W.G. diameter, 1.327 square inches total sectional area
 Main Branch cables carrying 300 Amperes, comprised of 61 wires, each 15 S.W.G. diameter, .670 square inches total sectional area
 Branch cables carrying _____ Amperes, comprised of 19 wires, each .058 S.W.G. diameter, .050 square inches total sectional area
 Leads to lamps carrying ½ Amperes, comprised of 1 wires, each - S.W.G. diameter, .0042 square inches total sectional area
 Cargo light cables carrying 2½ Amperes, comprised of 28 wires, each - S.W.G. diameter, .0037 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All wiring rubber covered double braid 30% Para.

Joints in cables, how made, insulated, and protected covered with rubber and friction tape and painted with insulating paint. Joints soldered.

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 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. -

How are cables carried through decks conduit.

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

If so, how are they protected -

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage yes

If so, how are the lamp fittings and cable terminals specially protected Lamps covered with Glass Globe and Brass Guard.

Where are the main switches and fuses for these lights fitted Forecastle.

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 yes

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 gas tight globes.

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 John A. Wright, President Electrical Engineers Date March 24th 1916.

COMPASSES.

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

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

The nearest cables to the compasses are as follows:—

A cable carrying	<u>10</u>	Amperes	<u>3</u>	feet from standard compass	<u>3</u>	feet from steering compass
A cable carrying	<u>1/2</u>	Amperes	<u>2</u>	feet from standard compass	<u>2</u>	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 every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

UNION IRON WORKS COMPANY,

By John A. Wright, President Builder's Signature. Date March 24th 1916.

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 notation of Electric Light in the Register Book.

It is submitted that this vessel is eligible for THE BROOD. Elec. light.

J. W. D. 26/4/16 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute WED. 26 APR. 1916

FRI. 16 JUN. 1916

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.