

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2500.

Port of SAN FRANCISCO, Date of First Survey Nov. 25th Date of Last Survey Apr. 7th No. of Visits six.
No. in on the ~~Iron~~ Steel Twin s/s "M A U I", Port belonging to San Francisco,
Reg. Book Suppl. 91 Built at San Francisco, By whom Union Iron Works Co. When built 1917
Owners Matson Navigation Company, Owners' Address 268 Market St., San Francisco.
Yard No. 127 Electric Light Installation fitted by UNION IRON WORKS COMPANY. When fitted 1917.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2-30 ^{26.4} k.w. General Electric Co. Generators direct connected to Reciprocating Engine.
1-60 ^{52.8} k.w. " " " " " " " " " "
Capacity of Dynamo 240-240-480 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 28 of lights, &c., as below
Positions of auxiliary switch boards and numbers of switches on each Frame 92, Flying Bridge 10-switches. Frame 77, Bridge Deck 12-switches. Frame 94, Upper deck 12-switches. Frame 144, Shelter dk. 14-switches. Frame 172, Shelter Dk. 12-switches. Frame 92 Upper Dk. 16 switches. Frame 130, U. Dk. 12-switches. F. 170 U. Dk. 14-switches. F. 22 U. Dk. 12. Frame 60, U. Dk. 14. F. 82 Main Dk. 14. F. 176 Main Dk. 14 "
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 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 yes
Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Heaters
Vent. Motors
Pump " etc.
Searchlight
Winches
Sounding Mch.
Navigation
lights.

Total number of lights provided for 1770 arranged in the following groups :—
A ⁹⁰ 113 lights each of 25 candle power requiring a total current of) Amperes
B ¹⁵² 157 lights each of " candle power requiring a total current of) Amperes
C ¹⁶⁷ 180 lights each of " candle power requiring a total current of 442 Amperes
D ¹³⁷ 126 lights each of " candle power requiring a total current of) Amperes
E ¹⁴³ 166 lights each of " candle power requiring a total current of) Amperes
1 Must head light with 2 lamps each of 40 candle power requiring a total current of 3/4 Amperes
2 Side light with 2 lamps each of 40 candle power requiring a total current of 1 1/2 Amperes
8 Cargo lights of 100 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 Pilot House.

DESCRIPTION OF CABLES.

Main cable carrying 240 Amperes, comprised of 37 wires, each S.W.G. diameter, .460 ✓ square inches total sectional area
Branch cables carrying 480 Amperes, comprised of 3-19 wires, each S.W.G. diameter, .859 ✓ square inches total sectional area
Branch cables carrying 50 Amperes, comprised of 7 wires, each S.W.G. diameter, .105 ✓ square inches total sectional area
Leads to lamps carrying 1/4 Amperes, comprised of 1 wires, each S.W.G. diameter, .0042 ✓ square inches total sectional area
Cargo light cables carrying 1 Amperes, comprised of 28 wires, each S.W.G. diameter, .0042 ✓ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

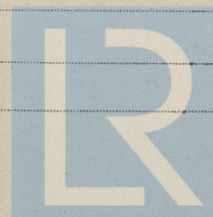
All wire rubber covered double braid in conduit.

Joints in cables, how made, insulated, and protected Soldered, taped, rubber & friction, painted with P&B paint.

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. conduit & stuffing boxes

How are cables carried through decks conduit and stuffing boxes

Are any cables run through coal bunkers 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 Leo Ames Electrical Engineers Date Apr. 17th 1917.

COMPASSES.

Distance between dynamo or electric motors and standard compass 100 ft.

Distance between dynamo or electric motors and steering compass 110 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1/4</u>	Amperes	<u>1</u>	feet from standard compass	<u>1</u>	feet from steering compass
A cable carrying	<u>20</u>	Amperes	<u>6</u>	feet from standard compass	<u>4</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 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 Leo Ames Builder's Signature. Date Apr. 17th 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 our opinion to have record of **ELECTRIC LIGHT** in the Register Book.

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

Committee's Minute

19/5/17. Surveyors to Lloyd's Register of British and Foreign Shipping.

New York APR 26 1917

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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.