

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2156.

Port of SAN FRANCISCO, Date of First Survey Jan. 12th Date of Last Survey Mar. 3rd No. of Visits six  
 No. in Reg. Book on the ~~XXXX~~ Steel s/s "J. A. MOFFETT", Port belonging to San Francisco,  
 Built at San Francisco, By whom Union Iron Works Co. When built 1915  
 Owners Standard Oil Co. of California, Owners' Address 200 Bush St., San Francisco.  
 Yard No. 115 Electric Light Installation fitted by UNION IRON WORKS COMPANY. When fitted 1915.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 - 25 k.w. Direct Current General Electric Generators direct connected to Curtis Steam Turbines.

Capacity of Dynamo 225 Amperes at 110 Volts, whether continuous or alternating current continuous ✓

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

Position of Main Switch Board left of dynamos having switches to groups - of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 board of 14 switches in Upper Engine Room;  
1 board of 14 switches in After Quarters; 1 board of 14 switches in Midship Quarters;  
2 boards of 12 and 8 switches in Forecastle.

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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 282 arranged in the following groups:—

A Upper Eng. R.	82 lights each of 40 Watts	candle power requiring a total current of	32	Amperes
B After Qtrs.	76 lights each of 40 "	candle power requiring a total current of	30	Amperes
C Midship Qtrs.	74 lights each of 40 "	candle power requiring a total current of	29	Amperes
D Forecastle,	38 lights each of 40 "	candle power requiring a total current of	15	Amperes
E Pump Room,	12 lights each of 40 "	candle power requiring a total current of	4	Amperes
1 Mast head light with	1 lamps each of 32	candle power requiring a total current of	1	Amperes
2 Side light with	1 lamps each of 32	candle power requiring a total current of	2	Amperes
6 Cargo lights of	96	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 225 Amperes, comprised of 19 wires, each 9 S.W.G. diameter, .289 square inches total sectional area

Branch cables carrying 30 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .059 square inches total sectional area

Branch cables carrying 15 Amperes, comprised of 7 wires, each 15 S.W.G. diameter, .028 square inches total sectional area

Leads to lamps carrying 3 Amperes, comprised of 1 wires, each 15 S.W.G. diameter, .004 square inches total sectional area

Cargo light cables carrying 3 Amperes, comprised of 28 wires, each 28 S.W.G. diameter, .004 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

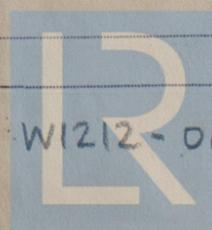
All wire rubber covered double braid.

Joints in cables, how made, insulated, and protected All joints soldered, rubber taped, friction taped and 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 All cables in 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 no 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 yes

If so, how are the lamp fittings and cable terminals specially protected cast iron junction boxes, heavy brass guards

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

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers

Cargo light cables, whether portable or permanently fixed permanent How fixed s.t. globes & heavy guards.

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, and with an amperemeter, fixed on 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 yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion no

How are the lamps specially protected in places liable to the accumulation of vapour or gas s.t. globes and guards.

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. A. James Electrical Engineers

Date 24th March 1915.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass

Distance between dynamo or electric motors and steering compass

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>1/4</u>	Amperes	<u>1</u>	feet from standard compass	<u>1</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 all course in the case of the standard compass and nil degrees on all course in the case of the steering compass.

**UNION IRON WORKS COMPANY,**

By Geo. A. James Builder's Signature. Date 24th March 1915.

**GENERAL REMARKS.**

This installation is fitted in accordance with the Rules of this Society and the vessel is eligible in my opinion to have the record of Electric Light in the Register Book.

*It is submitted that this vessel is eligible for*

**THE RECORD. Elec. light.** J.W.D.

W. Howard & P. Blackett

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

Committee's Minute FRI. APR. 16. 1915

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Imp. 11.13.—Transfer.



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