

FRI. DEC. 24. 1915

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2251.

Port of SAN FRANCISCO, Date of First Survey Sept. 13th Date of Last Survey Nov. 24th No. of Visits five.  
 No. in on the ~~Iron~~ Steel s/s "P A F I C I C", Port belonging to Bergen.  
 Reg. Book Built at San Francisco, By whom Union Iron Works Company. When built 1915.  
 Owners Aktieselskabet Dampskib Pacific, Mgr. Owner, Vilhelm Torkildsen, Bergen, Norway.  
 Yard No. 119 Electric Light Installation fitted by Union Iron Works Company. When fitted 1915.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two General Electric Dynamos direct connected to DeLaval Steam Turbines.

Capacity of Dynamo each 80 Amperes at 125 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Engine Room Whether single or double wire system is used double  
 Position of Main Switch Board near dynamo having switches to groups twelve of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Lower engine room, 4 switches. Galley, 4 switches.  
Messroom, 4 switches. Pantry, 4 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 yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 25 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 165 arranged in the following groups:—

A	24	lights each of	25	candle power requiring a total current of	6	Amperes
B	34	lights each of	25	candle power requiring a total current of	9	Amperes
C	26	lights each of	25	candle power requiring a total current of	7	Amperes
D	40	lights each of	25	candle power requiring a total current of	10	Amperes
E	35	lights each of		candle power requiring a total current of	1	Amperes
1	Mast head light with 1 lamps each of	100	candle power requiring a total current of	1	Amperes	
2	Side light with 1 lamps each of	100	candle power requiring a total current of	2	Amperes	
9	Cargo lights of	80	candle power, whether incandescent or <del>arc</del> lights	26		

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 80 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 10 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Branch cables carrying 20 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .017 square inches total sectional area  
 Leads to lamps carrying 1/2 Amperes, comprised of 1 wires, each 15 S.W.G. diameter, .0041 square inches total sectional area  
 Cargo light cables carrying 2 1/2 Amperes, comprised of 28 wires, each - S.W.G. diameter, .0041 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Rubber covered, double braid, 30% Para insulation.

Joints in cables, how made, insulated, and protected All joints in cables are soldered, rubber tape, friction tape and P & B paint used to cover joints.

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. 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

**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 Wm. H. ... President Electrical Engineers Date Dec. 1st 1915

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 75 feet

Distance between dynamo or electric motors and steering compass 75 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>1</u>	Amperes	<u>1</u>	feet from standard compass	<u>1</u>	feet from steering compass
A cable carrying	<u>20</u>	Amperes	<u>5</u>	feet from standard compass	<u>5</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 Wm. H. ... President Builder's Signature. Date Dec. 1st 1915.

**GENERAL REMARKS.**

This installation has been fitted in accordance with the rules, tested under running conditions and found in order and the vessel is eligible in our opinion to have notation of Electric Light in the Register Book.

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

J.W.D. 28/12/15 Surveyors to Lloyd's Register of British and Foreign Shipping. W. H. ... P. Blackett

Committee's Minute FRI. DEC. 31. 1915

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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