

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1497

Port of Shanghai Date of First Survey 2<sup>nd</sup> Nov/14 Date of Last Survey 15. 12. 14 No. of Visits 7  
 No. in Reg. Book on the Steel Twin Screw Submarine "Meiling" Port belonging to Tientsin  
 Built at Shanghai By whom Kiangnan Dock & Eng Works When built 1914  
 Owners Hai-Ho Consuevency Commission Owners' Address Tientsin  
 Yard No. 199 Electric Light Installation fitted by Kiangnan Dock & Eng Works When fitted 1914

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

3.6 Kilowatt Siemens four pole compound wound dynamo, direct coupled on same bedplate to a vertical single cylinder open fronted Readev engine.

Capacity of Dynamo 36 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In engine room, starboard side Whether single or double wire system is used Double

Position of Main Switch Board Aft Bulkhead E. R. having switches to groups 6 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Distribution board fitted in aft Saloon, engine room, forward saloon, bath room and in wheel house.

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 100 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 51 + 2 search lights arranged in the following groups:—

A	Forward	21	lights each of	16	candle power requiring a total current of	4.2	Amperes
B	Aft	8	lights each of	16	candle power requiring a total current of	1.6	Amperes
C	Engine Room	10	lights each of	16	candle power requiring a total current of	2.0	Amperes
D	Boiler Room	5	lights each of	16	candle power requiring a total current of	1.0	Amperes
E	2 Search lights		lights each of	about 2000	candle power requiring a total current of	16.00	Amperes
F	2 Mast head light with	1	lamps each of	16	candle power requiring a total current of	.4	Amperes
	2 Side lights with	1	lamps each of	16	candle power requiring a total current of	.4	Amperes
	6 one		Cargo lights of	3 lamps @ 16	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 In wheelhouse

**DESCRIPTION OF CABLES.**

Main cable carrying	36	Amperes, comprised of	19	wires, each	18	S.W.G. diameter,	.034	square inches total sectional area
Branch cables carrying	4.2	Amperes, comprised of	7	wires, each	21	S.W.G. diameter,	.005	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
Leads to lamps carrying		Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.0018	square inches total sectional area
Cargo light cables carrying	.6	Amperes, comprised of	40	wires, each	36	S.W.G. diameter,	.0018	square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

Tinned copper (100% conductivity), pure para rubber, two coats vulcanizing rubber and J.R. taped, then whole vulcanized the core run through melted ozokerit & then tape braided and lead covered.

Joints in cables, how made, insulated, and protected no joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances None 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 ✓

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 In battens & in tubes as necessary. All cables lead covered.



**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 Iron pipes.

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

What special protection has been provided for the cables near boiler casings Iron pipes

What special protection has been provided for the cables in engine room Iron pipes as required

How are cables carried through beams Holes protected by lead washers through bulkheads, &c. Iron pipes

How are cables carried through decks Water tight iron pipes.

Are any cables run through coal bunkers No or cargo spaces No or spaces which may be used for carrying cargo, stores, or baggage No

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 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 Water tight sockets

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 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 ✓

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 2500 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.

Thomas P. Crauston, Electrical Engineer Date 21.12.14

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 65'-0"

Distance between dynamo or electric motors and steering compass about 60'-0"

The nearest cables to the compasses are as follows:—

A cable carrying	<u>4.2</u>	Ampere	<u>10</u>	feet from standard compass	<u>8</u>	feet from steering compass
A cable carrying		Ampere		feet from standard compass		feet from steering compass
A cable carrying ( <u>Handlight</u> )	<u>16</u>	Ampere	<u>5</u>	feet from standard compass	<u>8</u>	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power ✓

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

R. B. Mauchan Builder's Signature. Date 21.12.14  
Superintendent.

**GENERAL REMARKS.**

The installation has been fitted according to the Rules and was tried under working conditions and found satisfactory

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

H. L. Fletcher

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

Committee's Minute TUE. JAN. 26. 1915

1m, 11.13.—Transfer.

THE STATEMENT ARE RECORDED FOR TO WRITE ACROSS THIS MARGIN.



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