

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2005

Port of Kobe Date of First Survey 10 Jan. Date of Last Survey 27 Feb 17 No. of Visits 12  
 No. in Reg. Book on the Honor Steel S.S. Ayaha Maru Port belonging to Kobe Japan  
 Built at Wada-Misaki, Kobe Japan By whom Mitsubishi Dockyard & Engine Works When built Feb. 1917  
 Owners Satenuma Kisen & Co. Owners' Address Mitsunoya-machi, Bunko-gun, Hyogo-Ken Japan  
 Yard No. 65 Electric Light Installation fitted by No. 1 Electric shop, Mitsunoya-machi, Kobe When fitted Feb 20<sup>th</sup> 1917

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One set of 12 kW 110 Volts Continuous Current Compound wound dynamo direct-coupled with single cylinder vertical engine located in the starboard engine room.  
 Capacity of Dynamo 109 Amperes at 110 Volts, whether continuous or alternating current D.C. ✓  
 Where is Dynamo fixed at 1<sup>st</sup> plat form of engine room Whether single or double wire system is used Double ✓  
 Position of Main Switch Board wall of engine room having switches to groups 5 feeders of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 2 submain board in steering engine room, 1 same and 2 distributing board in saloon pantry, 1 D.B. in fore-castle alleyway, each 1 D.B. in alleyway of amidship, 1 D.B. in chart room and 1 D.B. in engine room. Each one switch being provided to lamp  
 If fuses are fitted on main switch board to the cables of main circuit 70 amps and on each auxiliary switch board to the cables of auxiliary circuits 10 amp and at each position where a cable is branched or reduced in size 3 amp and to each lamp circuit 3 amp  
 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 on each wire.  
 Are the fuses of non-oxidizable metal Tin fuse and constructed to fuse at an excess of Complete 50 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, mounted on marble base.  
 Total number of lights provided for 151 arranged in the following groups :-  
 A Engine room lights each of Targsten 16 candle power requiring a total current of 10 Amperes  
 B Amidship lights each of " 16 candle power requiring a total current of 45 Amperes  
 C Fore castle lights each of " 16 candle power requiring a total current of 7 Amperes  
 D Cargo lights each of edison 32 candle power requiring a total current of 49 Amperes  
 E Fore and Main Mast head light with 2 lamps each of 32 candle power requiring a total current of 2 Amperes  
 port and starboard Side light with 2 lamps each of 32 candle power requiring a total current of 2 Amperes  
12 sets Cargo lights of 128 candle power, whether incandescent or arc lights of 2x5 amperes (each 1200 cp.)  
 If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed in chart room on the flying bridge with one switch & signal lamp each

## DESCRIPTION OF CABLES.

Main cable carrying 125 Amperes, comprised of Vulcanized wires, each # 37/16 S.W.G. diameter, 11.7 square inches total sectional area  
 Branch cables carrying 49 Amperes, comprised of Armoured wires, each 2x # 19/18 S.W.G. diameter, 0.68 square inches total sectional area  
 Branch cables carrying Amperes, comprised of wires, each S.W.G. diameter, square inches total sectional area  
 Leads to lamps carrying 3 Amperes, comprised of head covered wires, each # 16 S.W.G. diameter, 0.032 square inches total sectional area  
 Cargo light cables carrying Amperes, comprised of Vulcanized wires, each # 26/38 S.W.G. diameter, 0.075 square inches total sectional area

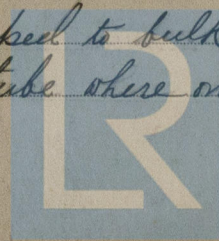
## DESCRIPTION OF INSULATION, PROTECTION, ETC.

All wirings consisting with vulcanized & steel armoured cable excluding signal light wiring & fitted to steel plate or runner of under deck floor clamped with quality of the wiring of signal light carried in galvanized iron tube those wires is special high insulation resistance  
 Joints in cables, how made, insulated, and protected all joint being done with brass terminal which mounted on porcelain base and covered with porcelain or cast iron cones

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances No 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 steel armoured cables firmly clamped to bulk head or runner of under deck plate with g.g. staples or protected Iron tube where on weather deck



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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 Steel wire armoured and covered with galvanized iron tube.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat with galv'd iron tube or steel armoured

What special protection has been provided for the cables near boiler casings galvanized iron tubing

What special protection has been provided for the cables in engine room steel armoured

How are cables carried through beams wooden bush through bulkheads, &c. brass stuffing box.

How are cables carried through decks galv'd iron deck tube.

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 with wooden trunk

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage 2 clusters each hatch & 4 portable lamps to both side bunker but terminals fitted on the deck bulk head

If so, how are the lamp fittings and cable terminals specially protected each done specially water proof

Where are the main switches and fuses for these lights fitted bulk head an starboard engine room.

If in the spaces, how are they specially protected no.

Are any switches or fuses fitted in bunkers no.

Cargo light cables, whether portable or permanently fixed yes portable How fixed with W.T. connecting plug.

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel no

How are the returns from the lamps connected to the hull no

Are all the joints with the hull in accessible positions no

Is the installation supplied with a voltmeter one voltmeter and with an amperemeter one ammeter fixed on main switch box

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 \_\_\_\_\_ 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.

N. Isaac Electrical Engineers Date Feb. 1, 1917.

COMPASSES.

Distance between dynamo or electric motors and standard compass 35 feet from motor alternator on wireless plant.

Distance between dynamo or electric motors and steering compass 30 ft " " "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>0.05</u>		<u>2</u>	<u>2</u>
A cable carrying	Amperes	feet from standard compass	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

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

MITSUBISHI DOCKYARD & ENGINE WORKS, KOBE.

[Signature] Builder's Signature. Date FEB 24 1917.

GENERAL REMARKS.

The installation has been well fitted in accordance with the Rules & worked satisfactorily on trial

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

[Signature] 7/6/17.

Arthur L Jones

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

Committee's Minute