

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2307

Port of YOKOHAMA Date of First Survey Sepr 14 Date of Last Survey Octr 20 No. of Visits 6  
 No. in 2 on the Iron or Steel S.S. "HAKUSHIKA MARU" Port belonging to Kebe  
 Reg. Book Tsurumi Built at Tsurumi By whom Asano Shipbuilding Co Ld When built 1917  
 Owners Tatsuma Steamship Co Ld Owners' Address Kebe  
 Yard No. 4 Electric Light Installation fitted by Asano Shipbuilding Co Ld When fitted 1917

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets Compound Dynamos direct current size of cylinder 6 1/2" stroke 4 1/2" revolutions 650.

Capacity of Dynamos 2 of 10 kil W Amperes at 100 Volts, whether continuous or alternating current continuous ✓  
 Where is Dynamo fixed Engine room platform Whether single or double wire system is used double ✓  
 Position of Main Switch Board Engine room platform having switches to groups 22 to 66 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each upper deck 2 for 5 lamps, upper bridge I for 3, lower bridge I for 3, shelter deck 2 for 3, middle shelter dk 2 for 5, shelter dk aft, 2 for 6, upper dk aft I for 1, engine room 3 for 10, boiler room I for 5  
 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 no  
 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 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  
 Total number of lights provided for 5 circuit arranged in the following groups:—  
 A Engine & boiler R lights each of 32 candle power requiring a total current of 36 Amperes  
 B Mid ford cir 6I lights each of 8 to 64 candle power requiring a total current of 32 Amperes  
 C Ford circ 22 lights each of 8 to 32 candle power requiring a total current of 16 Amperes  
 D Afetr cir 28 lights each of 8 to 32 candle power requiring a total current of 10 Amperes  
 E Mid after circ 45 lights each of 8 to 32 candle power requiring a total current of 25 Amperes  
2 Mast head light with D.F. lamps each of 32 candle power requiring a total current of 1.6 Amperes  
2 Side light with D.F. lamps each of 32 candle power requiring a total current of 1.6 Amperes  
7 Cargo lights of 32 candle power, whether incandescent or arc lights incandescent  
One Morse signal lamp 5 cp x 6 no arc lights 1.2  
 If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed Chart room

## DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 61 wires, each 18 S.W.G. diameter, 0.1132 square inches total sectional area  
 Branch cables carrying 36 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, 0.0624 square inches total sectional area  
 Branch cables carrying 32 Amperes, comprised of 7 wires, each 15 S.W.G. diameter, 0.0290 square inches total sectional area  
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 4.5 Amperes, comprised of 168 wires, each 38 S.W.G. diameter, .007 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

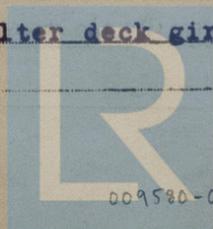
rubber, tape, lead cover, and armoured, and carried through steel piping

Joints in cables, how made, insulated, and protected junction boxes, porcelain bases, iron covers.

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 clipped to under side of shelter deck girders, and armoured, also in places led through steel piping.



**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 in steel piping or wire armoured

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

What special protection has been provided for the cables near boiler casings wire armoured and sheet iron covers

What special protection has been provided for the cables in engine room armoured wire and steel pipes.

How are cables carried through beams None through bulkheads, &c. W.T. packing gland ✓

How are cables carried through decks pipe and W.T. gland ✓

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 armoured wire and steel piping

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 XX

Where are the main switches and fuses for these lights fitted XX

If in the spaces, how are they specially protected XX

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed portable How fixed bibre fork and connector

In vessels fitted on the single-wire system, how is the dynamo terminal fixed to the hull of vessel X

How are the returns from the lamps connected to the hull X

Are all the joints with the hull in accessible positions X

Is the installation supplied with a voltmeter two, and with an amperemeter two, fixed at main 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 X

Are any switches, fuses, or joints of cables fitted in the pump room or companion XX

How are the lamps specially protected in places liable to the accumulation of vapour or gas XX

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 500 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.

Electrical Engineers Date

**COMPASSES.**

Distance between dynamo or electric motors and standard compass about 120ft

wireless meter 80ft

Distance between dynamo or electric motors and steering compass 85ft

The nearest cables to the compasses are as follows:—

A cable carrying	<u>21</u>	Amperes	<u>55</u>	feet from standard compass	<u>54</u>	feet from steering compass
A cable carrying	<u>10</u>	Amperes	<u>30</u>	feet from standard compass	<u>29</u>	feet from steering compass
A cable carrying	<u>1.5</u>	Amperes	<u>16</u>	feet from standard compass	<u>15</u>	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.

Arthur Tomiyama

Builder's Signature. Date 27<sup>th</sup> Oct. 1917

**GENERAL REMARKS.** The installation of this vessel has been fitted in accordance with the Society's Rules, the materials and workmanship are good, and the engines have been satisfactorily tried under steam.

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

JWD 11/12/17

Jaob Cairns

Surveyor to Lloyd's Register of Shipping.

Committee's Minute.

