

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1817

Port of Kobe Date of First Survey 21 Apr. 1916 Date of Last Survey 29 May No. of Visits 6
 No. in Reg. Book 115 on the Iron or Steel S. S. "Totai Maru" Port belonging to Amagasaki
 Built at Osaka By whom The Osaka Iron Works Ltd When built 1916
 Owners The Nippon Yusen Kaisha Owners' Address Hakodate, Kobe
 Yard No. 872 Electric Light Installation fitted by The Osaka Iron Works Ltd When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound six pole continuous current open type dynamo.
Vertical single cylinder engine directly coupled to the dynamo
 Capacity of Dynamo 60 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed on starboard side in engine room Whether single or double wire system is used double wire system
 Position of Main Switch Board on starboard side in engine room having switches to groups of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One in crew space in fore-castle with 2 switches, one in chart room upper bridge with 3 switches, one in saloon pantry on bridge deck with 4 switches, one in mess room on bridge deck with 2 switches one on starboard side of engine casing in bridge space with 6 switches and one on inside of poop front bulkhead with one switch
 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
 Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of about 30 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 no
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes
 Total number of lights provided for Signal living quarters &c arranged in the following groups:—
 A 61 lights each of 16 candle power requiring a total current of 34.20 Amperes
 B 4 lights each of 10 candle power requiring a total current of 1.40 Amperes
 C 2 lights each of 5 candle power requiring a total current of 0.35 Amperes
 D lights each of candle power requiring a total current of Amperes
 E lights each of candle power requiring a total current of Amperes
2 Mast head light with one lamps each of 32 candle power requiring a total current of 2.24 Amperes
2 Side light with one lamps each of 32 candle power requiring a total current of 2.24 Amperes
4 Cargo lights of 5 lamp each, each lamp of 16 candle power, whether incandescent or arc lights
 If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

Main cable carrying 51.64 Amperes, comprised of 60 wires, each 20 S.W.G. diameter, 0.61074 square inches total sectional area
 Branch cables carrying 24.63 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, 0.22519 square inches total sectional area
 Branch cables carrying 4.48 Amperes, comprised of 10 wires, each 24 S.W.G. diameter, 0.038013 square inches total sectional area
 Leads to lamps carrying 17.32 Amperes, comprised of 11 wires, each 20 S.W.G. diameter, 0.111969 square inches total sectional area
 Cargo light cables carrying 11.2 Amperes, comprised of 11 wires, each 20 S.W.G. diameter, 0.111969 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated by using lead cables
 Joints in cables, how made, insulated, and protected
Cables are jointed in joint boxes made of porcelain and protected by wooden boxes where necessary
 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 accessible
 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 by brass band fixed on wooden board and protected by wooden box or iron pipe where necessary and elsewhere by using lead cable.



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 *by iron pipe*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *by galvanized armoring wire*

What special protection has been provided for the cables near boiler casings *By galvanized armoring wire or iron pipe*

What special protection has been provided for the cables in engine room *By galvanized armoring wire or iron pipe*

How are cables carried through beams *Holes bushed with lead sheet* through bulkheads, &c. *Through water tight metal flanges*

How are cables carried through decks *Through brass or iron sockets*

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 *by galvanized iron pipe*

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 *On Starboard side bunker wall in engine room*

If in the spaces, how are they specially protected *by higher insulating materials*

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, and with an amperemeter, 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.

Electrical Engineers Date

COMPASSES.

Distance between dynamo or electric motors and standard compass *115 ft*

Distance between dynamo or electric motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying *1.8* Amperes *12* feet from standard compass feet from steering compass

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 degrees on course in the case of the standard compass and degrees on course in the case of the steering compass.

G. J. Jones Secy. *Electricians* Builder's Signature. Date *13th June 1916*

GENERAL REMARKS.

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

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

J. W. D. 19/7/16

Arthur L. Jones

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

Committee's Minute *FRI 24 JUL 1916*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 11.13.—Transfer.



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