

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 647

Port of Nagasaki Date of First Survey 10-1-09 Date of Last Survey 2-3-09 No. of Visits 6
 No. in on the Iron or Steel Twin "Atsuta Maru" Port belonging to Sorley
 Reg. Book 37 Built at Nagasaki By whom Kitsun Bishi Dockyard & E. W. When built 1909
 Owners Kipspon Yusen Kaisha Owners' Address Sorley
 Yard No. 197 Electric Light Installation fitted by Kitsun Bishi Dockyard & E. W. When fitted 1909

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two duplicate sets of a compound wound six pole continuous current dynamo, mounted on the same bed plate as, and coupled direct to a vertical open two crank compound engine.
 Capacity of Dynamo 350 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed On the thrust recess after the engine room
 Position of Main Switch Board On the after bulk head on the 3rd platform in the engine room having switches to groups from 1 to 118 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each of Social hall, one in bar room, Bridge deck, 3 on the port passage of 1st class, one on the starboard passage of 1st class, Upper deck, 3 on the saloon entrance well, 2 on the starboard passage of officers, 3 on the port passage of officers, 2 on the bulk head of cargo space, 3 on port passage of fore-castle, 2 on the port passage of after, one on the starboard passage of after, 2 on foot of fore mast, Main deck, one on bulk head of intermediate room of fore, 2 on bulk head of entrance deck, 2 on bulk room entrance, Engine and Boiler room, 3 in engine room, one in boiler room
 If cut outs 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 except lamp circuit
 If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes about 5% and
 Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of less than 100% per cent over the normal current
 Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases Yes
 Total number of lights provided for Ten arranged in the following groups:—

A Bridge deck after	lights each of 74-16 C.P., 1-32 candle power requiring a total current of	42.6	Amperes
B Bridge deck fore	" " 82-16 C.P., 4-32 C.P., 2-50 C.P.	58.9	"
C Cabin light	lights each of 83-16 C.P., 11-32 C.P., 26-50 C.P. & 1 one lamp	46.5	Amperes
D Search light	lights each of 1-Search light of 16000 candle power requiring a total current of	72.82	"
E After deck after	" " 60-16 C.P., 16-32 C.P., 8-50 C.P.	60.00	Amperes
F Upper deck fore	lights each of 38-16 C.P., 9-60 candle power requiring a total current of	56.1	"
G Engine room	" " 118-16 C.P.	37.1	Amperes
H Fore mast	lights each of 33-36 C.P., 40-12 C.P., 14-1/2 candle power requiring a total current of	66.1	"
I Two Mast head light with filament lamps each of	32 candle power requiring a total current of	50.6	Amperes
J Two Side light with " lamps each of	32 candle power requiring a total current of	1.12	Amperes
K Ten Cargo lights of	200 candle power, whether incandescent or are lights	1.12	Amperes

If are lights, what protection is provided against fire, sparks, &c. Protected by plane glass case

Where are the switches controlling the masthead and side lights placed in the wheel house on the boat deck

DESCRIPTION OF CABLES.

Main cable carrying 360 Amperes, comprised of 37 wires, each 12 L.S.G. diameter, 0.3145 square inches total sectional area
 Branch cables carrying 60 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, 0.0604 square inches total sectional area
 Branch cables carrying 37.03 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, 0.0604 square inches total sectional area
 Leads to lamps carrying 2.24 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, 0.0032 square inches total sectional area
 Cargo light cables carrying 720 Amperes, comprised of 283 wires, each 38 L.S.G. diameter, 0.00792 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The whole of the cables and wires, used through out the installation are covered with pure and vulcanized India rubber, India rubber coated tape, the whole vulcanized together, braided with cotton and then covered with preservative compound and then surrounded with galvanized iron wire or covered with lead
 Joints in cables, how made, insulated, and protected All joints are made at brass terminal pieces fitted on China or Granite plate base in submain board, distributing board or extension boxes

Are all the joints of cables thoroughly soldered, resin only having been used as a flux 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 by double wired multiple switchboard system and they are protected by galvanized iron wires or covered with lead

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 galvanized iron wires or galvanized iron pipe*

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

What special protection has been provided for the cables near boiler casings *by galvanized iron wires*

What special protection has been provided for the cables in engine room *by galvanized iron wires or galvanized iron pipes*

How are cables carried through beams *Teak ferrules* through bulkheads, &c. *by iron flanges and jinn cuts*

How are cables carried through decks *through deck tubes*

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 *They are protected by galvanized iron pipes or galvanized iron wires*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *None in coal bunkers and some in cargo spaces*

If so, how are the lamp fittings and cable terminals specially protected *Lamps are protected by strong brass guards*

Where are the main switches and cut outs for these lights fitted *They are fitted in the entrance or outside bulk head of the space*

If in the spaces, how are they specially protected *Lamps and cable terminals are protected by cast iron covers*

Are any switches or cut outs fitted in bunkers *No*

Cargo light cables, whether portable or permanently fixed *Portable* How fixed *fixed with fibre fork and connector*

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

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 installation is supplied with a voltmeter and an amperemeter, fixed

The copper used is guaranteed to have a conductivity of *100* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *600* megohms per statute mile after 24 hours' immersion in seawater.

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.

H. O. Kadgums Electrical Engineers

Date *March 4-1909.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *128 ft*

Distance between dynamo or electric motors and steering compass *123 ft*

The nearest cables to the compasses are as follows:—

Cable	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying <i>4 HS</i>	<i>8</i>	<i>7</i>	<i>7</i>
A cable carrying <i>5-6</i>	<i>1</i>	<i>5</i>	<i>5</i>
A cable carrying			

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

H. T. M. A. General Manager Builder's Signature. Date *March 8, 1909.*

GENERAL REMARKS.

This installation has been fitted in accordance with the Rules, tested and found satisfactory

D. H. Robertson acting
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

It is submitted that the Record Elec. Light be noted in the Reg. Book

31.3.09

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.