Rpt. 13.

Received at London Office 18

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 826

Port of NAGASAKI. Date of First Survey 6th March Date of Last Survey 7th June, 1913 No. of Visits 10

No. in Reg. Book — on the ~~Iron or~~ Steel Twin geared turbine s.s. "Anyo Maru" Port belonging to Yokohama

Built at Nagasaki By whom Mitsu Bishi D. & E. Works When built 1913

Owners Toyo Kisen Kaisha Owners' Address Tokio

Yard No. 229 Electric Light Installation fitted by Mitsu Bishi D. & E. Works When fitted 1913

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two sets of compound wound continuous current dynamos on the same bed plate with a vertical engine

Capacity of Dynamo 350 Amperes at 100 Volts, whether continuous or alternating current Continuous ✓

Where is Dynamo fixed On the starboard side of 2nd deck in main engine room

Position of Main Switch Board Front of dynamo having switches to groups 68 to 119 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Boat deck:- one in fore cabin, one in aft cabin
Shelter deck:- one under fore mast, one in fore steerage entrance, one in fore port saloon entrance, four in port passage, two in starbd. passage, one under main mast, one in aft steerage entrance. Upper Deck:- four in fore steerage, five in aft steerage, three in dynamo 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 and to each lamp circuit No.

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.

Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 50 ✓ 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 7 Circuits arranged in the following groups:—

A Shelter Dk. Fore Circuit lights each of 34 - 16 c.p. 4 - 32 c.p. 6 - 5 c.p. 6 - 8 c.p. 61 - 25 c.p. 2 - 50 c.p. candle power requiring a total current of 52.98 Amperes

B Do. aft Do. lights each of 55 - 25 c.p. 2 - 50 c.p. 11 - 16 c.p. candle power requiring a total current of 30.56 Amperes

C Upper Dk. Fore Do. lights each of 59 - 16 c.p. 18 - 32 c.p. 1 - 8 c.p. candle power requiring a total current of 54.68 Amperes

D Do. aft. Do. lights each of 77 - 16 c.p. 12 - 32 c.p. 2 - 8 c.p. 27 - 25 c.p. 1 - 50 c.p. candle power requiring a total current of 69.13 Amperes

F Fore Cargo 24 - 50 c.p. 42.00

E Engine Room lights each of 87 - 16 c.p. candle power requiring a total current of 48.72 Amperes

G Aft Cargo 18 - 50 c.p. 31.50

Two Mast head lights with one double filament lamps each of 32 candle power requiring a total current of 2.24 Amperes

Two Side lights with do. lamps each of 32 candle power requiring a total current of 2.24 Amperes

24 Cargo lights of 150 c.p. and 96 c.p. candle power, whether incandescent or arc lights Incandescent

One Morse code flashing lamp 6 — 5 c.p. 1.1 amperes

If arc lights, what protection is provided against fire, sparks, &c. ✓

Where are the switches controlling the masthead and side lights placed In wheel house on navigating bridge

DESCRIPTION OF CABLES.

Main cable carrying 350 Amperes, comprised of 2 × 37 wires, each 14 L.S.G. diameter, 0.3812 ✓ square inches total sectional area

Branch cables carrying 69 Amperes, comprised of 19 wires, each 16 L.S.G. diameter, 0.0624 ✓ square inches total sectional area

Branch cables carrying 13 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, 0.0129 square inches total sectional area

Leads to lamps carrying .56 Amperes, comprised of 1 wires, each 16 L.S.G. diameter, 0.0032 ✓ square inches total sectional area

Cargo light cables carrying 5.25 Amperes, comprised of 283 wires, each 38 L.S.G. diameter, 0.00792 ✓ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC. Wires and cables used under upper deck are composed of tinned copper insulated with pure india rubber, vulcanizing india rubber, india rubber coated tape, and the whole vulcanized together, then armoured with galvanized iron wires; and above shelter deck the wires are insulated as above then braided and covered with preservative compound or protected with lead cover.

Joints in cables, how made, insulated, and protected Joints in cables are made in brass pieces in submain boards, distributing boards, extension boxes, and some joints in cast iron boxes are soldered and insulated with pure india rubber or india rubber coated tape.

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 except mast head lights in extension box in cast iron cover

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 With the double wire distributing system, and cables are protected by lead cover, or galvanized wires, or galvanized iron pipes and wood casings.

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 Protected by galvanized iron pipes.

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

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

What special protection has been provided for the cables in engine room Protected by galvanized iron wires.

How are cables carried through beams Through teak ferrules *through bulkheads, &c.* Galvanized iron pipes fitted in brass stuffing boxes.

How are cables carried through decks Through galvanized iron deck tubes

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 By galvanized iron wires or galvanized iron pipes.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes.

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

Where are the main switches and cut outs for these lights fitted On the fore bulkhead of upper deck.

If in the spaces, how are they specially protected By water tight cast iron box.

Are any switches or cut outs fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable *How fixed* With fibre fork & fibre 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 pumps 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* two ~~*an*~~ *amperemeters fixed* on switch board

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.

MITSU BISHI DOCKYARD & ENGINE WORKS.
[signature] General Manager. Electrical Engineers *Date* 7th June 1913

COMPASSES.

Distance between dynamo or electric motors and standard compass 130 feet from main dynamo; 27 feet from 3 K.W. wireless telegraphy motor generator

Distance between dynamo or electric motors and steering compass 128 feet from main dynamo; 25 feet from 3 K.W. wireless telegraphy motor generator.

The nearest cables to the compasses are as follows:—

A cable carrying	4.48	*Amperes*	8	*feet from standard compass*	6	*feet from steering compass*
A cable carrying	.28	*Amperes*	1	*feet from standard compass*	1	*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 Yes

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

MITSU BISHI DOCKYARD & ENGINE WORKS.
[signature] General Manager. Builder's Signature. *Date* 7th June 1913

GENERAL REMARKS. This Electric installation has been fitted in accordance with the Rules, tested, and found satisfactory.

It is submitted that this vessel is eligible for THE RECORD. Elec. light. JWD 23/6/13 41RS

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

TUE. JUN. 24. 1913

Committee's Minute

REPORT FORM No. 13.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.