

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 219

Port of Nagasaki Date of First Survey 13th Sept. Date of Last Survey 27th Nov No. of Visits 20
 No. in on the Iron or Steel J. S. S. "Iyo maru" Port belonging to Tokyo
 Reg. Book New Built at Nagasaki By whom Mitsui Bishi Dock & Eng. Co. When built 1901
 Owners Nippon Yusen Kaisha Owners' Address Tokyo
 Yard No. 125 Electric Light Installation fitted by Mitsui Bishi Dock & Eng. Co. When fitted 1901

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two duplicate sets of a compound wound direct current dynamo, mounted on the same bed plate as, and coupled direct to a vertical compound open front Engine

Capacity of Dynamo Each 400 Amperes at 65 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Both in the thrust block recess

Position of Main Switch Board Engine room aft bulkhead on top platform having switches to groups Two to 65 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine Rm fore-Bulkhead, Eng. Rm aft Bulkhead, Thrust block recess, 1st class pantry, social hall, wheel house, 1st class saloon aft corner port & starboard each, outside of cabins on shade deck port & starboard, lamp room, passage to firemen's quarter, Pantry on poop deck, starboard passage on poop, 5th Engineer's Room & 5th Officer's Room. One switch on each board.

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 with the exception of extension boxes from and to each lamp circuit - NO which run branches to every 3 lamps

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, exclusive lamp circuit

Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of not more than 50 per cent over the normal current

Are all cut outs fitted in easily accessible positions yes, all in bulkhead main boards & in distributing boards 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, on slate base

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 320 arranged in the following groups:—

A Forecastle	24 lights each of 16 C.P. & 6 light of 32 candle power requiring a total current of 35.15 Amperes
A Search light	one very canal search light & one arc lamp 75.00 "
B Fore Tween Deck	12 lights each of 50 candle power requiring a total current of 32.28 Amperes
B Aft Cargo & Tween Deck	2 lights, each of 16 C.P. & 4 lights each of 50 C.P. and 18 lights each of 32 C.P. 47.94 "
C Amidship port	60 lights each of 16 C.P. & 2 light of 50 candle power requiring a total current of 56.98 Amperes
C Amidship starboard	63 " " " 16 C.P. & 2 light of 50 " " " 59.58 "
D Aft Deck	36 lights each of 16 C.P. & 2 light of 50 C.P. candle power requiring a total current of 48.16 Amperes
D Amidship Cargo	30 " " " 32 C.P. " " " 59.10 "
E Engine room	50 lights each of 16 C.P. candle power requiring a total current of 43. Amperes
Fore & main Mast head lights with	each one special double filament lamps each of 32, candle power requiring a total current of 3.94 Amperes
Both Side light, with	one special double filament lamps each of 32, candle power requiring a total current of 3.94 Amperes
10 Cargo lights of	6 x 32 = 192 candle power, whether incandescent or arc lights Incandescent

If arc lights, what protection is provided against fire, sparks, &c. with hexagonal lantern

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

DESCRIPTION OF CABLES.

Main cable carrying 311.28 Amperes, comprised of 37 wires, each # 12 L.S.G. diameter, 0.3217 square inches total sectional area
 Branch cables carrying 351.5 Amperes, comprised of 19 wires, each # 16 L.S.G. diameter, 0.0624 square inches total sectional area
 Branch cables carrying 32.28 Amperes, comprised of 19 wires, each # 18 L.S.G. diameter, 0.0349 square inches total sectional area
 Leads to lamps carrying 7.94 to 11.18 Amperes, comprised of 7 wires, each # 18 L.S.G. diameter, 0.0128 square inches total sectional area
 Cargo light cables carrying 11.76 Amperes, comprised of 100 wires, each # 31 L.S.G. diameter, 0.0105 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

The whole cables & wires used throughout the installation are covered with pure & vulcanized india rubber, india rubber coated tape, the whole vulcanized together, braided & cotton & then covered preservative compound.

The cables which are liable to be exposed to moisture or mechanical injury are protected with iron casings and which are liable to heat are armoured with galvanized iron wires and fastened to bulkhead or deck with clips and screws

Joints in cables, how made, insulated, and protected All joints are made in brass terminal pieces fitted in extension boxes, distributing boards, sub-main boards. Very few joints of # 16 wires are made in wood casing, being thoroughly soldered, & covered with J.R. tape & J.R. 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 all accessible, none

made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage being made in bunkers, but few extension boxes are fixed on tween deck just under main deck, being guarded with cast iron covers

Are there any joints in or branches from the cable leading from dynamo to main switch board none, excepting those for Voltmeter & West lamp

How are the cables led through the ship, and how protected By multiple board double wired system, and they are protected with wood casing, iron pipe, galvanized iron wire or lead armoured

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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes, excepting those in iron pipes carried through bunker*
 What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Galv^d iron pipes*

What special protection has been provided for the cables near galley or oil lamps or other sources of heat *armoured with galv^d iron wires*

What special protection has been provided for the cables near boiler casings *carried in galv^d iron pipes or armoured with galv^d iron wires*

What special protection has been provided for the cables in engine room *armoured with galv^d iron wires*

How are cables carried through beams *through teak ferrels driven in, but armoured wire without ferrels* through bulkheads, &c. *through water light stuffing boxes*

How are cables carried through decks *through lead or iron deck tubes lined with wood or vulcanized fibre*

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 *with galv^d iron pipes*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *none in bunkers, but some in cargo space and baggage Rm.*

If so, how are the lamp fittings and cable terminals specially protected *lamps with strong cast brass guards, cable terminals teak blocks on which lamps fixed*

Where are the main switches and cut outs for these lights fitted *on both ends of port-allway fore & aft - and in pantry in poop deck*

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

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

Cargo light cables, whether portable or permanently fixed *portable* How fixed *with fibre forks & fibre connectors*

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 *On main Switch board*

The copper used is guaranteed to have a conductivity of *not less than 98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *1,000* 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.

J. D. Dainale Electrical Engineers

Date *30-11-01*

COMPASSES.

Distance between dynamo or electric motors and standard compass *122 ft 0"*

Distance between dynamo or electric motors and steering compass *114 ft 0"*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>0. 8 6</i>	<i>10</i>	<i>8</i>	

Have the compasses been adjusted with and without the electric installation at work at full power *Double wire*

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.

J. D. Dainale General Manager
W. H. H. H. H. H.

Builder's Signature. Date

GENERAL REMARKS.

Committee's Minute

A. L. Jones

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

It is submitted that this installation appears to be satisfactory.



Lloyd's Register
 Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.