

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1949

Port of Nobe Date of First Survey 29 Nov. Date of Last Survey 23rd Dec 1916 No. of Visits 5
 No. in Reg. Book on the ~~Iron~~ Steel S.S. "Tensho Maru" Port belonging to _____
 Built at Osaka By whom The Osaka Iron Works When built 1916
 Owners _____ Owners' Address _____
 Yard No. 892 Electric Light Installation fitted by The Osaka Iron Works When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Multipolar compound wound dynamo direct coupled to single cylinder vertical engine
 Capacity of Dynamo 10 K.W. 100 Amperes at 100 Volts, whether continuous or alternating current continuous ✓
 Where is Dynamo fixed in engine room Whether single or double wire system is used double ✓
 Position of Main Switch Board in engine room having switches to groups 4 in No. 1 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each One in chart room which have 7, one in pantry which have 4, one in mess room which have 5, one in engine room which have 6, one in crew space which have 3 switches.
 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 yes
 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 30 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 on switch board.
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes
 Total number of lights provided for signal chain cargo &c. arranged in the following groups:—

A	<u>97</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>54.3</u>	Amperes
B	<u>10</u>	lights each of	<u>10</u>	candle power requiring a total current of	<u>3.5</u>	Amperes
C	<u>2</u>	lights each of	<u>6</u>	candle power requiring a total current of	<u>0.42</u>	Amperes
D	<u>2 arc</u>	lights each of	<u>nearly 1,000</u>	candle power requiring a total current of	<u>5.0</u>	Amperes
E	<u>1 stern</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>0.56</u>	Amperes
	<u>Mast head light with 2</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.24</u>	Amperes
	<u>Side light with 2</u>	lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.24</u>	Amperes
	<u>10</u>	Cargo lights of <u>4 lamps groups 16</u>		candle power, whether incandescent or arc lights	<u>incandescent</u>	

 If arc lights, what protection is provided against fire, sparks, &c. metal guard on the grass groove
 Where are the switches controlling the masthead and side lights placed chart room

DESCRIPTION OF CABLES.

Main cable carrying	<u>100</u>	Amperes, comprised of	<u>100</u>	wires, each	<u>28</u>	L.S.G. diameter,	<u>0.10170</u>	square inches total sectional area
Branch cables carrying	<u>31</u>	Amperes, comprised of	<u>19</u>	wires, each	<u>18</u>	L.S.G. diameter,	<u>0.03437</u>	square inches total sectional area
Branch cables carrying	<u>9</u>	Amperes, comprised of	<u>11</u>	wires, each	<u>20</u>	L.S.G. diameter,	<u>0.011019</u>	square inches total sectional area
Leads to lamps carrying	<u>1.06</u>	Amperes, comprised of	<u>7</u>	wires, each	<u>18</u>	L.S.G. diameter,	<u>0.02252</u>	square inches total sectional area
Cargo light cables carrying	<u>2.12</u>	Amperes, comprised of	<u>1</u>	wires, each	<u>16</u>	L.S.G. diameter,	<u>0.003217</u>	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Joints in cables, how made, insulated, and protected in the iron box or porcelain & soldered or fitted screw
 Are all the joints of cables thoroughly soldered, resin only having been used as a flux soldering piece 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 in accessible position
 Are there any joints in or branches from the cable leading from dynamo to main switch board no joint & branches
 How are the cables led through the ship, and how protected through ships side under deck iron & wooden cover



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 lead covering wire cased in wooden or metal cover.

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

What special protection has been provided for the cables near boiler casings armoured gal. wire.

What special protection has been provided for the cables in engine room do.

How are cables carried through beams protected by lead tube through bulkheads, &c. water tight metal ✓

How are cables carried through decks iron cover or brass tube & keeping water tightness. ✓

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 iron cover in coal bunker armoured gal. iron in hold.

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

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

Where are the main switches and cut outs for these lights fitted in engine room.

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers no.

Cargo light cables, whether portable or permanently fixed portable How fixed by plug to socket in cast iron box.

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

The installation is not supplied with a voltmeter and not an amperemeter, fixed

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 copper used is guaranteed to have a conductivity of 99 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.

G. Genuda Electrical Engineers Date 19th. Feb. 1917.

COMPASSES.

Distance between dynamo or electric motors and standard compass about 100'-0"

Distance between dynamo or electric motors and steering compass about 120'-0"

The nearest cables to the compasses are as follows:—

A cable carrying	<u>0.33</u>	Amperes	<u>2</u>	feet from standard compass	<u>3</u>	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.

OSAKA IRON WORKS, LTD.

Y. Yamaguchi Builder's Signature. Date

GENERAL REMARKS.

MANAGING DIRECTOR.

The installation has been fitted in accordance with the Rule requirements & worked satisfactorily on trial.

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

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



© 2021 Lloyd's Register Foundation