Rpt. 13.

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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1684

Port of Kobe Date of First Survey 4th Aug. Date of Last Survey 29th Sep 1915 No. of Visits 7

No. in Reg. Book ____ on the ~~Iron~~ Steel Scr. Stmr. "Konan Maru" Port belonging to Osaka

Built at Osaka By whom The Osaka Iron Works When built 1915

Owners The Osaka Shosen Kaisha Owners' Address Osaka. Japan

Yard No. 853 Electric Light Installation fitted by The Osaka Iron Works When fitted 1915

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Compound wound, four pole, continuous current open type dynamo
Vertical, single cylinder engine directly coupled to the dynamo.

Capacity of Dynamo 63 Amperes at 110 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Engine Room, starboard side Whether single or double wire system is used Double wire

Position of Main Switch Board In Eng. Rm. Starboard having switches to groups A, B, C, D, E, of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each One in fcsle Crew Space, 3 switches: one in chart room on upper bridge, 7 switches: one in saloon pantry, bridge dk. 6 switches: one in mess room, bridge dk aft 5 switches: one each side machy casing, bridge space Each 4 switches: one in Eng. Rm: 5 switches: + one in poop, 3 switches.

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 yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 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 ____

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 175 arranged in the following groups :—

A	89	lights each of	Tungsten filamt	16	candle power requiring a total current of	15·53	Amperes
B	63	lights each of	Carbon filament	16	candle power requiring a total current of	30·24	Amperes
C	16	lights each of	"	10	candle power requiring a total current of	4·8	Amperes
D	5	lights each of	"	32	candle power requiring a total current of	4·8	Amperes
E	2	lights each of	"	24	candle power requiring a total current of	1·44	Amperes
2	Mast head light with	2	lamps each of	32	candle power requiring a total current of	1·92	Amperes
2	Side light with	2	lamps each of	32	candle power requiring a total current of	1·92	Amperes
4	Cargo lights of	5 lamps	Each of	16	candle power, whether incandescent or arc lights	incandescent.	

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

Where are the switches controlling the masthead and side lights placed in chart room on upper bridge deck

DESCRIPTION OF CABLES.

Main cable carrying	63	Amperes, comprised of	65	wires, each	19	S.W.G. diameter,	0·084 ✓ square inches total sectional area
Branch cables carrying	8·83	Amperes, comprised of	30	wires, each	19	S.W.G. diameter,	0·0377 ✓ square inches total sectional area
Branch cables carrying	9·6	Amperes, comprised of	2×7	wires, each	19	S.W.G. diameter,	0·076 ✓ square inches total sectional area
Leads to lamps carrying	0·48	Amperes, comprised of	1	wires, each	16	S.W.G. diameter,	0·0032 ✓ square inches total sectional area
Cargo light cables carrying	2·4	Amperes, comprised of	110	wires, each	38	S.W.G. diameter,	0·0031 ✓ square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber & tape: protected by lead tubing.

Joints in cables, how made, insulated, and protected Cables are jointed in porcelain joint boxes & 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 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 Brass bands fixed on wooden boards & cased in with wood, or carried through iron pipes where necessary.

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 Led through iron pipes.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Wood casing

What special protection has been provided for the cables near boiler casings Wood casing

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

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

How are cables carried through decks through brass or iron sockets

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 Armoured wire used.

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

If so, how are the lamp fittings and cable terminals specially protected Cast iron covers

Where are the main switches and fuses for these lights fitted In the engine room

If in the spaces, how are they specially protected

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 Yes, *and with an amperemeter* Yes, *fixed* in Eng. Rm.

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° Farhenheit 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 84 feet

Distance between dynamo or electric motors and steering compass 110 feet

The nearest cables to the compasses are as follows :—

A cable carrying 96 *Amperes* 9 *feet from standard compass* 8 *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 Yes

The maximum deviation due to electric currents, etc., was found to be East 50/60 *degrees on* N.E. *course in the case of the standard compass and* *degrees on* *course in the case of the steering compass.*

OSAKA IRON WORKS, LTD.

T. Yamaguchi *Builder's Signature.* MANAGING DIRECTOR *Date*

GENERAL REMARKS.

The installation has been well fitted & worked satisfactorily on trial.

~~It is submitted that~~ this vessel is eligible for THE RECORD Elec. light. JWR 8/17/15.

A. L. Jones

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

Committee's Minute FRI. JAN. 14. 1916

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

1m,11,13.—Transfer.