

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 3626.

Port of Kobe Date of First Survey 13-3-22 Date of Last Survey 10-5-22 No. of Visits 8
 No. in on the ~~Iron~~ Steel S.S. "KANJU MARU" Port belonging to Tokuyama
 Reg. Book Built at Oh Harima By whom Kobe Steel Works When built 1922-5
 Owners Asahi Sekiyu Kabushiki Kaisha Owners' Address Kobe
 Yard No. 48 Electric Light Installation fitted by Kobe Steel Works When fitted 1922-5

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 13 K.W. Generators, Compound wound, direct connected to single vertical engines.

Capacity of Dynamo 130 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Aft engine room, at level of middle platform. Wire, double throughout.
 Position of Main Switch Board Near Dynamo having switches to groups A.B.C.D.E.F.G. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each one of 7 sw. in E.R.; one of 7 sw. in Engineers mess.
Two of 5 sw. each in cross space; one of 7 sw. in saloon passageway; one of 4 sw. on bridge.
 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 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 206 arranged in the following groups:—

A	ENG. & BIR. ROOMS	lights each of	30 @ 200 + 31 @ 16	candle power requiring a total current of	12.2	Amperes
B	ENGINEER & CREW SPACES	lights each of	76 @ 16	candle power requiring a total current of	15.2	Amperes
C	FAN MOTORS	lights each of	10 @ 80	candle power requiring a total current of	9.0	Amperes
D	SIGNAL	lights each of	11 @ 16 + 9 @ 32 C.P.	candle power requiring a total current of	14.4	Amperes
E	BRIDGED SALOON	lights each of	58 @ 16	candle power requiring a total current of	11.6	Amperes
F	WIRELESS	lights each of	30 @ 16	candle power requiring a total current of	30.0	Amperes
2	Mast head light with	2 lamps each of	32	candle power requiring a total current of	2.24	Amperes
2	Side light with	2 lamps each of	32	candle power requiring a total current of	2.24	Amperes
2			1000 C.P. each			
F.	4	Cargo lights of	128	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. None fitted

Where are the switches controlling the masthead and side lights placed? Chart Room.

DESCRIPTION OF CABLES.

Main cable-carrying	108.8	Amperes, comprised of	37	wires, each	16	S.W.G. diameter,	.1170	square inches total sectional area
Branch cables carrying	12.2	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	.0070	square inches total sectional area
Branch cables carrying	13.2	Amperes, comprised of	7	wires, each	19	S.W.G. diameter,	.0086	square inches total sectional area
Leads to lamps carrying	9.0	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	.0070	square inches total sectional area
Cargo light cables carrying	16.4	Amperes, comprised of	7	wires, each	18	S.W.G. diameter,	.0125	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Rubber & tape, lead covered, & armoured, Part in steel tubing & part in wood casings

Joints in cables, how made, insulated, and protected Bran terminals, on porcelain bases, & enclosed in W.T. Cast Iron junction boxes where exposed to weather.

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 Lead covered armoured cable in steel tubing where exposed to weather, & alongside beams in bridge space & Popp.

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 covered, part in wood casings and part in steel tubing.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Steel tubing*

What special protection has been provided for the cables near boiler casings *Steel tubing*

What special protection has been provided for the cables in engine room *Lead covered & armoured & part in steel tubing*

How are cables carried through beams *Holes in beams insulated* through bulkheads, &c. *W.T. stuffing boxes*

How are cables carried through decks *Steel tubes with W.T. stuffing boxes*

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 *clipped to beams, part in wood casings & part in steel tubing.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *No*

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

Where are the main switches and cut-outs for these lights fitted *in pump*

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 *Plugged in, in W.T. Cl. Boxes*

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 *Yes*

Are any switches, cut-outs, or joints of cables fitted in the pump room or companion *No*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Gaslight glass guards protected*

The installation *is* supplied with a voltmeter and *also* an amperemeter, fixed *on main switch board*

The copper used is guaranteed to have a conductivity of *600* 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.

Kobe Steel Works (Hammia Plant) Electrical Engineers Date *May 1922.*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 336 feet*

Distance between dynamo or electric motors and steering compass *" 48 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>14.4</i>	<i>8.0</i>	<i>abt 20.0</i>	<i>8.0</i>
<i>12.8</i>	<i>11.6</i>	<i>20.0</i>	<i>22.0</i>
<i>A cable carrying</i>	<i>Amperes</i>	<i>feet from standard compass</i>	<i>feet from steering compass</i>

Have the compasses been adjusted with and without the electric installation at work at full power *No*

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.

[Signature] Builder's Signature. Date *7/4/1922*

GENERAL REMARKS.

The fitting of the cables in this vessel are as stated in report and appear to be in accordance with the Society's Rules requirements. Dynamometers have been tested under full load conditions & found satisfactory.

H.D. Buchanan.

Lee Yen 195 paid 25/5/22. Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute