

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 2755

Received at London Office TUE 22 FEB 1921

Port of Yokohama Date of First Survey Nov. 2 Date of Last Survey DEC. 13 No. of Visits 10
 No. in on the ~~Iron or Steel~~ SS. "LUSHAN-MARU." Port belonging to Tokyo
 Reg. Book Built at Uraga Dock By whom Uraga Dock Co. Ltd When built 12-1920
 Owners Nishui Kisen Kabushiki Kaisha Owners' Address 1-1 Chome, Yurakucho Kojimachi Tokyo
 Yard No. 175 Electric Light Installation fitted by Uraga Dock Co. Ltd When fitted 12-1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

one 7 K.W. Generator direct connected to single vertical engine.

Capacity of Dynamo Seventy Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Lower engine room Starboard side Whether single or double wire system is used Double
 Position of Main Switch Board Near dynamo having switches to groups A.A. B.B. C.C. D.D. E. of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 2 sw. in upper E.R. 1 sw. in lower E.R. 2 sw. in Fore passage, 1 sw. in passageway, 7 sw. in chart room, 2 sw. in poop 8 sw. in bridge space, 3 sw. in pantry, 1 sw. in galley on bridge deck, 2 sw. in engineers mess room, 1 sw. in bridge deck to officers quarters, 2 sw. in poop passage. Independent switches at all lamp fuses
 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 Standard make and constructed to fuse at an excess of 10 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 Stand. plug fuses
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 232 arranged in the following groups:—

A	FORN 2 ND DK. 40	lights each of	16-32 (8 750 WATT)	candle power requiring a total current of	17.7	Amperes
A'	CHART ROOM 9	" " "	5-82-16	" " " "	4.2	Amperes
B	AMIDSHIPS 59	lights each of	16	candle power requiring a total current of	11.8	Amperes
B'	" 23 FANS OF 10" 12" & 20"	" " "	"	" " " "	9.6	Amperes
C	" 57	lights each of	16-32	candle power requiring a total current of	12.2	Amperes
C'	ENG. BLK ROOM 29	" " "	16	" " " "	5.8	Amperes
D	AFT 8 2 ND DK. 38	lights each of	16-32 (8 750 WATT)	candle power requiring a total current of	17.3	Amperes
E	WIRELESS	lights each of	"	candle power requiring a total current of	20	Amperes
2	Mast head light with 2 lamps each of 32	"	"	candle power requiring a total current of	.8	Amperes
2	Side light with 2 lamps each of 32	"	"	candle power requiring a total current of	.8	Amperes
7	Cargo lights of 4 lamps each 32	"	"	candle power, whether incandescent or arc lights	Incan-descent	

If arc lights, what protection is provided against fire, sparks, &c. No arc lights fitted.
2 nitrogen lamps of 750 Watts each.

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

DESCRIPTION OF CABLES.

Main cable carrying	60-70	Amperes, comprised of	60	wires, each	20	S.W.G. diameter,	.0611	square inches total sectional area
Branch cables carrying	30	Amperes, comprised of	30	wires, each	20	S.W.G. diameter,	.0306	square inches total sectional area
Branch cables carrying	15	Amperes, comprised of	15	wires, each	20	S.W.G. diameter,	.0152	square inches total sectional area
Leads to lamps carrying	1.8	Amperes, comprised of	1	wires, each	18	S.W.G. diameter,	.00181	square inches total sectional area
Cargo light cables carrying	7	Amperes, comprised of	7	wires, each	20	S.W.G. diameter,	.00714	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Rubber tape, lead covered & armoured. Part in steel tubing, & part in wood casings. Some cables led through beams & clipped to underside of deck

Joints in cables, how made, insulated, and protected W.T. Cast Iron boxes & Brass terminals fitted in porcelain bases.

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 Part in wood casings, & part in steel tubing
Armoured cable, clipped to underside of deck & led thro' insulated holes in beams.

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 thro' steel tubing*

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

What special protection has been provided for the cables near boiler casings *Led thro' steel tubing*

What special protection has been provided for the cables in engine room *Armoured cable in wood casings & steel tubing*

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

How are cables carried through decks *Steel tubing & 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 *Armoured cables led thro' beams & clipped to underside of deck*

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 fuses for these lights fitted *✓*

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 *W.T. Boxes with screw plugs*

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 *on Main Switch Board*

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° Fahrenheit 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.

Wraga Dock Co. Ltd

Electrical Engineers

Date *30-12-20*

COMPASSES.

Distance between dynamo or electric motors and standard compass

about 95 feet

Distance between dynamo or electric motors and steering compass

" 90 "

The nearest cables to the compasses are as follows:—

A cable carrying *2* Amperes *6* feet from standard compass *12* 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 *Nil* degrees on *every* course in the case of the standard compass and *Nil* degrees on *every* course in the case of the steering compass.

K. Ushiohara Builder's Signature. Date *6-1-21.*

GENERAL REMARKS.

The fitting of the cables throughout this vessel are as stated in this report & appear to be in accordance with the Committee's requirements. Eligible in my opinion to have the notations "Electric Light" & "Wires fitted" in Register Book

H.D. Buchanan.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 7 MAR. 1921