Rpt. 13.

Received at London Office 19

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 825 Ez.

Port of Kobe Date of First Survey 10th Feby '09 Date of Last Survey 5th June '09 No. of Visits 20

No. in Reg. Book 41 Sup. on ~~the Iron or~~ Steel T.S.S. "Tacoma Maru" Port belonging to Osaka

Built at Kobe By whom The Kawasaki Dockyard Co Ltd When built 1909

Owners The Osaka Shosen Kaisha Owners' Address Osaka

Yard No. 297 Electric Light Installation fitted by The Kawasaki Dockyard Co Ltd When fitted 1909

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One set of D.C. 15 K.W. 110 Volt G.E. Marine type Compound dynamo coupled to G.E. Single Cylinder Engine (8" dia. 6" Stroke 120 lb/in² steam pressure) and One set of D.C. 6·5 K.W. 125 Volt W.H. Compound dynamo coupled to Westinghouse single acting 2 Cylinder (5" dia 4" stroke 100 lb/in² steam pressure) Engine.

Capacity of Dynamos 136 and 44 ~~tth~~ Amperes at 110 and 125 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Two dynamos are fixed in the Engine Room Whether single or double wire system is used Double wire system

Position of Main Switch Board Two switchboards in the Engine Room having switches to groups A. B. C. D. E and F. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 auxiliary switchboard on Boat Deck. 2 on Bridge deck in A circuit. 1 on Forward Upper deck in B circuit. 1 on Aft Upper deck in C circuit. 2 in Amid Steerage place in D circuit and 6 in Engine room in the circuit E. 6 auxiliary switchboards for cargo lights 2 on Bridge 4 on Upper decks in F circuit. Two main switches are placed in each board.

If cut outs are fitted on main switch board to the cables of main circuit fitted and on each auxiliary switch board to the cables of auxiliary circuits fitted and at each position where a cable is branched or reduced in size fitted and to each lamp circuit fitted

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 fitted

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, porcelain or slate is used

Total number of lights provided for 274 arranged in the following groups :—

A	71	lights each of	8, 16 and 32	candle power requiring a total current of	45	Amperes
B	22	lights each of	16	candle power requiring a total current of	12·2	Amperes
C	9	lights each of	16	candle power requiring a total current of	5	Amperes
D	35	lights each of	16 and 32	candle power requiring a total current of	28	Amperes
E	60	lights each of	16	candle power requiring a total current of	33	Amperes
F	77	" " "	32	" " " " " " "	84	Amperes
	2 Mast head lights with	1 lamps each of	32	candle power requiring a total current of	2·4	Amperes
	2 Side lights with	1 lamps each of	32	candle power requiring a total current of	2·4	Amperes

12 Cargo lights of 1200 and 128 candle power, whether incandescent or arc lights 2 Arcs & 10 incandescent

If arc lights, what protection is provided against fire, sparks, &c. Adequate fuses are inserted in the circuit and the carbon poles are protected with inner and outer glass globes.

Where are the switches controlling the masthead and side lights placed In the Wheel house.

DESCRIPTION OF CABLES.

~~Main~~ Cable A carrying	45	Amperes, comprised of	19	wires, each	16	L.S.G. diameter,	·0624 square inches total sectional area
Cable B carrying	12·2	" " "	7	" "	16	" " " "	·023 " " " " "
~~Branch~~ cables C carrying	5	Amperes, comprised of	~~twin~~	wires, each	14	L.S.G. diameter,	·005 square inches total sectional area
Cable D carrying	28	" " "	19	" "	18	" " " "	·0351 " " " " "
~~Branch~~ Cables E carrying	33	Amperes, comprised of	19	wires, each	18	L.S.G. diameter,	·0351 square inches total sectional area
Cable F "	84	" " "	19	" "	14	" " " "	·0976 " " " " "
Leads to lamps carrying	·6	Amperes, comprised of	~~twin~~	wires, each	18	L.S.G. diameter,	·0018 square inches total sectional area
Cargo light cables carrying	5	Amperes, comprised of	172	wires, each	38	L.S.G. diameter,	·005 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors are doubly insulated with india-rubber, vulcanized rubber and tape. Cables are protected against mechanical injury ~~and~~ chemical action with armouring or lead covering

Joints in cables, how made, insulated, and protected Joints are made in water tight junction boxes

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 Accessible and none in ~~bunkers~~ &c.

Are there any joints in or branches from the cable leading from dynamo to main switch board none

How are the cables led through the ship, and how protected Cables are led unconcealed and protected with armouring or with iron pipes

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible They are all in accessible places

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture armouring or lead covering

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

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

What special protection has been provided for the cables in engine room lead covering and iron piping

How are cables carried through beams with wood or lead lining *through bulkheads, &c.* with water tight glands

How are cables carried through decks with galvanized iron pipes

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 armouring and piping.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage 19 lamps & 8 sockets & pins for use of portable lamps

If so, how are the lamp fittings and cable terminals specially protected They are protected with guarded water tight covers.

Where are the main switches and cut outs for these lights fitted Outside in water tight cast iron boxes.

(If in the spaces, how are they specially protected)

Are any switches or cut outs fitted in bunkers none

Cargo light cables, whether portable or permanently fixed Portable *How fixed* With water tight sockets & pins

(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 completely *supplied with* 2 ~~1~~ *voltmeters and* 2 *an amperemeters, fixed on* Two *marble switchboards*

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 98 *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.

Electrical Engineers *Date*

COMPASSES.

Distance between dynamo ~~or electric motors~~ and standard compass 99 feet

Distance between dynamo ~~or electric motors~~ and steering compass 96 feet

The nearest cables to the compasses are as follows:—

A cable carrying 5 *Amperes* 9 *feet from standard compass* 8½ *feet from steering compass*

A cable carrying 3 *Amperes* 9½ *feet from standard compass* 8 *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* all *courses in the case of the standard compass and* nil *degrees on* all *courses in the case of the steering compass.*

Kawasaki Dockyard Co., Ltd.,
For Gen Nakatsuka.
Chief Secretary.

Builder's Signature. *Date*

GENERAL REMARKS. The workmanship has been found good and on trial the installation worked satisfactorily.

It is submitted that this vessel is eligible for the RECORD Elec Light.
J&K

Arthur L. Jones

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

Committee's Minute

REPORT FORM No. 15.—2m,3,4.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.