

Total number of lights provided for		1356		arranged in the following groups :-	
A	79	lights each of	16	candle power requiring a total current of	47.4 Amperes
B	32	lights each of	16	candle power requiring a total current of	21.6 Amperes
C	19	lights each of	16	candle power requiring a total current of	11.4 Amperes
D	83	lights each of	16	candle power requiring a total current of	49.8 Amperes
E	84	lights each of	16	candle power requiring a total current of	50.4 Amperes
F	117	lights each of	16	candle power requiring a total current of	70.2 Amperes
G	63	lights each of	16	candle power requiring a total current of	37.8 Amperes
H	91	lights each of	16	candle power requiring a total current of	54.6 Amperes
I	8	lights each of	16	candle power requiring a total current of	4.8 Amperes
J	82	lights each of	16	candle power requiring a total current of	49.2 Amperes
K	69	lights each of	16	candle power requiring a total current of	41.4 Amperes
L	98	lights each of	16	candle power requiring a total current of	58.8 Amperes
M	112	lights each of	16	candle power requiring a total current of	67.2 Amperes
N	64	lights each of	16	candle power requiring a total current of	44.4 Amperes
O	88	lights each of	16	candle power requiring a total current of	52.8 Amperes
P	111	lights each of	16	candle power requiring a total current of	66.6 Amperes
Q	62	lights each of	16	candle power requiring a total current of	37.2 Amperes
	2	mast head light with 1 lamps each of	32	candle power requiring a total current of	1.1 Amperes
	2	Side light with 1 lamps each of	32	candle power requiring a total current of	1.1 Amperes
	90	Cargo lights of	16	candle power whether incandescent or arc lights	Incandescent & arcs.



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Lloyd's Register
Foundation

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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 30930.

Port of Glasgow Date of First Survey 24. 8. 11. Date of Last Survey 20. 12. 11. No. of Visits 28.
 No. in Reg. Book on the Iron or Steel T.S.S. "Maunganui" Port belonging to Dunedin
 Built at Fairfield Govan By whom The Fairfield Shipbuilding & Engineering Co. When built 1911
 Owners The Union Steamship Co. of New Zealand Ltd. Owners' Address Dunedin
 Yard No. 479 Electric Light Installation fitted by The Fairfield Shipbuilding & Engineering Co. When fitted 1911

DESCRIPTION OF DYNAMO, ENGINE, ETC. *an additional 110V. 11.8 KW oil engine set fitted 4-4-11*

Three Multipolar, Compound wound dynamos each direct coupled to a compound, Double acting, enclosed, forced lubrication type engine
 Capacity of Dynamo 600 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed In dynamo flat Engine Room port Whether single or double wire system is used Double
 Position of Main Switch Board In dynamo flat having switches to groups 7 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each On Main Deck Starboard 2 in number, 12 switches on each

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 50 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
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 1356 arranged in the following groups:—*See attached list*
 A lights each of _____ candle power requiring a total current of _____ Amperes
 B lights each of _____ candle power requiring a total current of _____ Amperes
 C lights each of _____ candle power requiring a total current of _____ Amperes
 D lights each of _____ candle power requiring a total current of _____ Amperes
 E lights each of _____ candle power requiring a total current of _____ Amperes
 Mast head light with _____ lamps each of _____ candle power requiring a total current of _____ Amperes
 Side light with _____ lamps each of _____ candle power requiring a total current of _____ Amperes
 Cargo lights of _____ candle power, whether incandescent or arc lights

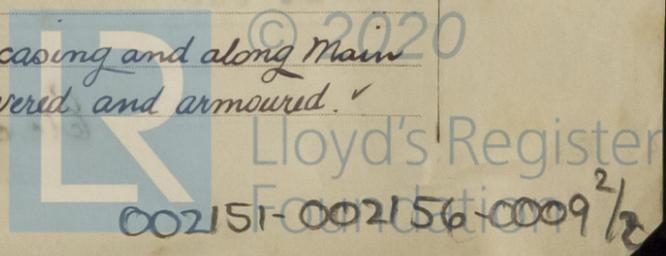
If arc lights, what protection is provided against fire, sparks, &c. Totally enclosed type
 Where are the switches controlling the masthead and side lights placed In Wheel House

DESCRIPTION OF CABLES.

Main cable carrying 600 Amperes, comprised of 91 wires, each .101 L.S.G. diameter, .75 square inches total sectional area
 Branch cables carrying 70 Amperes, comprised of 19 wires, each .14 L.S.G. diameter, .094 square inches total sectional area
 Branch cables carrying 54 Amperes, comprised of 19 wires, each .16 L.S.G. diameter, .060 square inches total sectional area
 Leads to lamps carrying 6 Amperes, comprised of 3 wires, each .20 L.S.G. diameter, .003 square inches total sectional area
 Cargo light cables carrying 4.8 Amperes, comprised of 7 wires, each .20 L.S.G. diameter, .007 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised, taped, braided and compounded also Lead covered and armoured
 Joints in cables, how made, insulated, and protected None
 Are all the joints of cables thoroughly soldered, resin only having been used as a flux _____ Are all joints in accessible positions, none being made in bunks, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage _____
 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 From Switchboard up engine casing and along Main Upper Deck to the various parts of the ship. Wood casing. Lead covered and armoured.



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 Teak wood casing

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

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

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

How are cables carried through beams Fibre Bushes through bulkheads, &c. W. J. Glando

How are cables carried through decks W. J. Brass deck tubes

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 Lead covered and armoured

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

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

Where are the main switches and cut outs for these lights fitted In teak case in Stokholds

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 Teak wood terminal 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 _____ supplied with a voltmeter and _____ an amperemeter, fixed on Switchboard for each machine

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.

FIELD SHIPBUILDING AND ENGINEERING CO., LIMITED.

A. Sampson Electrical Engineers Date 1st Dec^r 1911.

COMPASSES.

Distance between dynamo or electric motors and standard compass 178 feet

Distance between dynamo or electric motors and steering compass 174 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>6</u> Amperes	<u>on</u> feet from standard compass	<u>on</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 Yes

The maximum deviation due to electric currents, etc., was found to be nil degrees on any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

FIELD SHIPBUILDING AND ENGINEERING CO., LIMITED

A. Sampson Builder's Signature. Date 1st Dec^r 1911.

GENERAL REMARKS.

The Electric Lighting of this vessel has been satisfactorily carried out.

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

H. Gardner-Smith
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute GLASGOW 27 DEC. 1911
Elec. Light.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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25/12/11