

A

lights each of

candle power requiring a total current of

B

lights each of

candle power

S.S. Mangalore

W432-0210(112)

A	Engine room	43	lights of 16cp	requiring current	25.8	amps
B	Engineers & etc	29	" " "	"	14.4	"
C	Poop	22	" " "	"	13.2	"
D	Saloon	37	" " "	"		
	& Bridge	5	" " 32cp	"	29.2	"
		4	" " 8cp	"		
E	Wireless				15.0	"
F	Aft barge	18	" " 16cp	"	10.8	"
	& 1/2 watt.	1	" " 1000cp	"	9.5	10.0
F'	Forward barge	24	" " 16cp	"	14.4	"
	& 1/2 watt.	1	" " 1000cp	"	9.5	10.0
	Projector		20,000cp	"	2.0	60.0

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure Rubber, Vulcanized Rubber Tapes & etc

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REPORT ON ELECTRIC LIGHTING INSTALLATION. No.

Port of Glasgow Date of First Survey 10th July Date of Last Survey 7th June No. of Visits 7
 No. in Reg. Book 338019 on the Iron or Steel S.S. Mangalore Port belonging to Liverpool
 Built at W. Hillrich By whom Messrs C. Connell & Co When built 1900
 Owners Messrs T. & G. Brocklebank Owners' Address Cunard Buildings Liverpool
 Yard No. 376 Electric Light Installation fitted by W. A. T. Robertson When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two dynamos compound wound multipolar type each dynamo coupled direct to a vertical engine 8" x 4" stroke @ 275 revolutions

Capacity of Dynamo each 135 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room starting Platform Whether single or double wire system is used Double wire

Position of Main Switch Board " " " " having switches to groups A, B, C, D, E, F, & F' of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each No Auxiliary Switch Boards Fitted

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary ^{FOUSE} 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 100 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 Yes

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

Total number of lights provided for 182 arranged in the following groups:—

- 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

Two Mast head light with 1 lamp each of 32 candle power requiring a total current of 2 Amperes

Two Side light with 1 lamp each of 32 candle power requiring a total current of 2 Amperes

Seven Cargo lights of 6 of 16 cp = 96 candle power, whether incandescent or arc lights Incandescent
Two Half watt lamps = 1000 " " each.

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

No Arc Lamps Fitted

Where are the switches controlling the masthead and side lights placed In Bridge Chart House

DESCRIPTION OF CABLES.

Main cable carrying 135 Amperes, comprised of 37 wires, each 15 S.W.G. diameter, .151 square inches total sectional area

Branch cables carrying _____ Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0225 square inches total sectional area

Branch cables carrying _____ Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .0127 square inches total sectional area

Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 17 S.W.G. diameter, .00246 square inches total sectional area

Cargo light cables carrying 3.6 Amperes, comprised of 119 wires, each 38 S.W.G. diameter, .00322 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure Rubber, Vulcanized Rubber Tapes & Leads covered in accommodation, elsewhere Braided & Armoured.

Joints in cables, how made, insulated, and protected No Joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances no joints 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 no joints

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 Forwards under Bridge Deck & Tween Decks aft thro' Shaft Tunnel to poop; Armoured with Galv'd Wire Armouring

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 or galvanised iron pipes*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Armoured & Braided*

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

What special protection has been provided for the cables in engine room *" " " "*

How are cables carried through beams *Fibres or lead Bushes through bulkheads, &c. w. T. Glands.*

How are cables carried through decks *In Galv'd Iron Deck 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 *Armoured & Braided*

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 *—*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double Wired*

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 *2* amperemeters, fixed on *switchboard*

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.

H. J. Robertson & Co. Electrical Engineers

Date *9th June '20*

COMPASSES.

Distance between dynamo or electric motors and standard compass *120 Feet*

Distance between dynamo or electric motors and steering compass *115 Feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>10</i>	Ampere	<i>8</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>1.2</i>	Ampere	<i>8</i>	feet from standard compass	<i>8</i>	feet from steering compass
A cable carrying	<i>3</i>	Ampere	<i>into</i>	feet from standard compass	<i>& into</i>	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.

For CHARLES CONNELL & CO., Limited.

J. W. Ballou SECRETARY

Builder's Signature.

Date *16 Aug. 1920*

GENERAL REMARKS.

This installation has been fitted on board under special survey tested under full working conditions found satisfactory.

*Elec Lt
Roll
16/9/20*

J. Stanley Rankin
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 7-SFP1920*

Elec. Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 7.10—Transfer