

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8208

Port of Belfast Date of First Survey Aug 9 1918 Date of Last Survey May 14, 1919 No. of Visits 10
 No. in on the Iron or Steel T.S.S. Port Bowen Port belonging to
 Reg. Book Built at Belfast By whom Wickman Clark & Co. Ld. When built 1919
 Owners The Commonwealth Docking Co. Ltd. London
 Yard No. 356 Electric Light Installation fitted by Sunderland Forge Ld. When fitted 1919

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 - Compound Wound, Multipolar Dynamos, each coupled to vertical open type single cylinder steam engines, on combination bedplate. Speed - 275 R.P.M.

Capacity of Dynamos each 165 Amperes at 100 Volts, whether continuous or alternating current Continuous

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

Position of Main Switch Board In Engine Room having switches to groups 10 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 in Wheelhouse - 8 switches for navigating lights

1 in Engine Room - 10 switches

1 " " " - 8 " "

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 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 668 arranged in the following groups:—

A	A	117	lights each of	16	candle power requiring a total current of	23.4	Amperes	
B	B	Wireless Installation				30.0		
B	C	96	lights each of	16	candle power requiring a total current of	19.2	Amperes	
D	D	86	" " "	16	" " " " " " " " lamp	17.2		
C	E	50	lights each of	16 C.P. & 1 H.C.P.	candle power requiring a total current of	20.0	Amperes	
F	F	35	" " "	16 C.P. & 1 ditto.		17.0		
D	G	122	lights each of	16 C.P.	candle power requiring a total current of	24.4	Amperes	
H	H	69	" " "	16 C.P.	" " " " " " " "	13.8		
E	J	90	lights each of	16	candle power requiring a total current of	18.0	Amperes	
K	K	Motor for Turbine Turning Gear				40.0	"	
2	2	Mast head light with	1	lamps each of	16	candle power requiring a total current of	1.2	Amperes
3	3	Side light with	1	lamps each of	16	candle power requiring a total current of	1.2	Amperes
70	70	Cargo lights of		16 C.P. & 2 H.C.P. Lamps	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 In Wheelhouse on Bridge (Main Mast Light Controlled from Poop)

DESCRIPTION OF CABLES.

Main cable carrying 165 Amperes, comprised of 37 wires, each 14 S.W.G. diameter, .1824 square inches total sectional area
 Branch cables carrying 30 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .060 square inches total sectional area
 Branch cables carrying 23 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0221 square inches total sectional area
 Leads to lamps carrying 1.8 Amperes, comprised of 7 wires, each 25 S.W.G. diameter, .0021 square inches total sectional area
 Cargo light cables carrying 10 Amperes, comprised of 114 wires, each 38 S.W.G. diameter, .00319 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned Copper Conductors, insulated with pure & Vulcanised Indiarubber, taped & the whole vulcanised together and finished as follows:— In Accommodation - Lead Cvd. & Braided overall
 In Machinery & Cargo Spaces:— " " armoured & braided

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 --- 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 ---

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 & braided cables secured to beams by galvanised iron saddles and brass screws.

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 armoured and braided.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Covd, 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 Through holes bushed with fibre through bulkheads, &c. through brass W.T. Glands

How are cables carried through decks " deck tubes made water-tight.

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 Lead covered armoured and braided

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 Glass Well Jar and strong brass guard

Where are the main switches and fuses for these lights fitted In Engine Room

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 To heavy brass terminals fitted in cast iron boxes on deck.

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 2, and with 2 amperemeters 2, fixed In Engine Room

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 2500 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. W. Digby Electrical Engineers Date 19th Sept. 1919

COMPASSES.

Distance between dynamo or electric motors and standard compass 124 feet

Distance between dynamo or electric motors and steering compass 116 "

The nearest cables to the compasses are as follows:—

Cable	Amperes	Feet from standard compass	Feet from steering compass
A cable carrying <u>6.4</u>	<u>7</u>	<u>7</u>	<u>7</u>
A cable carrying <u>0.2</u>	<u>3</u>	<u>3</u>	<u>3</u>
A cable carrying <u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>

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.

PRO WORKMAN, CLARK & CO. LIMITED Builder's Signature. Date 23 Sept. 1919

GENERAL REMARKS.

This installation is of good description through hand, and has been fitted in accordance with the Rules.

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

R. F. Brumby Surveyor to Lloyd's Register of Shipping.

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.