

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8292

Port of *Belfast* Date of First Survey *13<sup>th</sup> Jan 19* Date of Last Survey *31<sup>st</sup> Jan 20* No. of Visits *Eleven*  
 No. in Reg. Book on the *Iron or Steel* *P.S. New Brighton* Belonging to  
 Built at *Belfast* By whom *Harland & Wolff L<sup>ds</sup>* When built *1920*  
 Owners *African Steamship Co. Ltd.* Owners' Address *London*  
 Yard No. *577* Electric Light Installation fitted by *Harland & Wolff L<sup>ds</sup>* When fitted *1920*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*One Enclosed forced lubrication, Single Cylinder Engine + Dynamo, with Cylinder 5 1/2" x 5" Stroke, Speed 520 R.P.M.*

Capacity of Dynamo *100* 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 *A. B. C. D. E* of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each *~~~~~*

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 *169 & 5<sup>1000 CP</sup>* Lamps arranged in the following groups:—

A	Navigation	5 lights each of 32 CP & 5 lbs of 8	candle power requiring a total current of	<i>8.1</i>	Amperes
B	Cabin + Crew	93 lights each of 16 CP	candle power requiring a total current of	<i>18.6</i>	Amperes
C	Engine + Boilers	34 lights each of 12 FANS each 3 x 27 CP & 3 lbs of 1000	candle power requiring a total current of	<i>25.2</i>	Amperes
D	Cargo	30 lights each of 16 CP & 2 lbs of 1000	candle power requiring a total current of	<i>20.1</i>	Amperes
E	Wireless	lights each of	candle power requiring a total current of	<i>15.0</i>	Amperes
2	Mast head lights with 1 lamp each of	32	candle power requiring a total current of	<i>2.4</i>	Amperes
2	Side lights with 1 lamp each of	32	candle power requiring a total current of	<i>2.4</i>	Amperes
5	Cargo lights of	96	candle power, whether incandescent or arc lights	<i>Incandescent</i>	
2	1/2 Watt " " " " " "	1000	" " " " " "	"	

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

Where are the switches controlling the masthead and side lights placed *In wheelhouse.*

## DESCRIPTION OF CABLES.

Main cable carrying	<i>23</i>	Amperes, comprised of	<i>7</i>	wires, each	<i>16</i>	S.W.G. diameter, .02201	square inches total sectional area
Branch cables carrying	<i>2.5</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>14</i>	S.W.G. diameter, .005	square inches total sectional area
Branch cables carrying		Amperes, comprised of		wires, each		S.W.G. diameter,	square inches total sectional area
Leads to lamps carrying	<i>1.8</i>	Amperes, comprised of	<i>1</i>	wires, each	<i>17</i>	S.W.G. diameter, .00246	square inches total sectional area
Cargo light cables carrying	<i>2.5</i>	Amperes, comprised of	<i>90</i>	wires, each	<i>36</i>	S.W.G. diameter, .00407	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*Cables + branch wiring exposed are 600 megohm E.M.A. grade vulcanized india rubber armoured + white braided also 1/4 A.P. 25 lb lead covered cable*

Joints in cables, how made, insulated, and protected *Joints made in W.I. Junction Boxes on decks + porcelain Junction Boxes with iron protecting cover in Engine Room.*

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 *Cables clipped direct to bulkhead + protected by armoring and braiding in Engine Room, Galley + Crew's Quarters + lead covered in Accommodation*



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 *in piping*

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

What special protection has been provided for the cables near boiler casings *Armoured + Braided Cables*

What special protection has been provided for the cables in engine room *Armoured + Braided Cables*

How are cables carried through beams *Beams lashed with lead or fibre through bulkheads, &c. in Tanks if U.S. otherwise lead & fibre*

How are cables carried through decks *In Iron Deck Pipes lashed or with Gland.*

Are any cables run through coal bunkers *Yes* or cargo spaces *No* or spaces which may be used for carrying cargo, stores, or baggage *No*

If so, how are they protected *Armoured + braided cable in galvanized iron piping.*

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 *Permanently* How fixed *Armoured + braided cable clipped to bulkhead*

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 *Switchboard in Eng. Rm.*

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.

COMPASSES.

Distance between dynamo or electric motors and standard compass *114 ft. from Dynamo 18 ft. from Wireless Rotary.*

Distance between dynamo or electric motors and steering compass *119 ft. " " 20 " " " "*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>6-0</i>	Amperes	<i>10</i>	feet from standard compass	<i>5</i>	feet from steering compass
A cable carrying	<i>15-0</i>	Amperes	<i>26</i>	feet from standard compass	<i>22</i>	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* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

GENERAL REMARKS.

*This installation is of good description throughout, and has been fitted in accordance with the Rules*

*S. J. Johnson* Builder's Signature. Date *7/2/20*

*R. F. Baerwald*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. FEB. 17. 1920

FRI. JUL 16 1920



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