

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4445

Port of Belfast Date of First Survey Nov 15th 1916 Date of Last Survey Feb 13th 1917 No. of Visits 16
 No. in Reg. Book on the Iron and Steel S.S. Appleleaf Port belonging to London
 Built at Belfast By whom Workman Clark & Co built 1917
 Owner Their Lord's Commissioners Owners' Address Liverpool
 Yard No. 366 Electric Light Installation fitted by Lumberland Forge Co When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 - Combined Electric Generating Plants, each consisting of Compound Enclosed type, forced lubrication steam engine direct coupled to compound wound multipolar dynamo.
 Capacity of Dynamos each 250 Amperes at 105 Volts, whether continuous or alternating current Continuous ✓
 Where is Dynamo fixed Aft end engine room. Whether single or double wire system is used Double wire ✓
 Position of Main Switch Board Aft end engine room. having switches to groups 10 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each
1 on bridge for navigating lights &c 10 Switches
 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 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 Cartridge fuses used
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes.

Total number of lights provided for 437 arranged in the following groups :-

A	52	lights each of	16	candle power requiring a total current of	31.2	Amperes
B		Workshop motor			40.0	"
C	19	lights each of	16	candle power requiring a total current of	47.4	Amperes
D		1/2 Ventilating Fan motors			50.0	"
E	66	lights each of	16	candle power requiring a total current of	39.6	Amperes
F		Searchlight port (wiring only fitted)			80.0	"
G	57	lights each of		candle power requiring a total current of	34.2	Amperes
H		Searchlight star (wiring only fitted)			80.0	"
I	87	lights each of	16	candle power requiring a total current of	52.2	Amperes
J	96	" " " "	16	" " " " " "	57.6	"
	2	Mast head light with 1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
	2	Side light with 1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
	48	Cargo lights of	50	candle power, whether incandescent or arc lights	Incandescent	

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 wheel house.

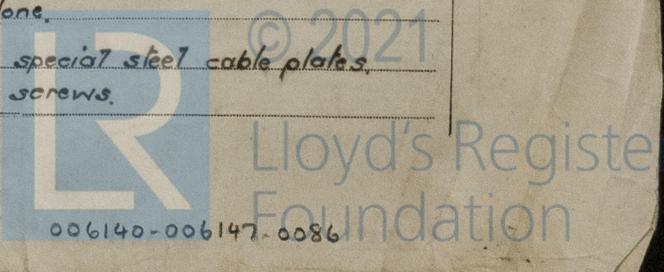
DESCRIPTION OF CABLES.

Main cable carrying 250 Amperes, comprised of 37 wires, each 0.112" L.S.G. diameter, 0.350 square inches total sectional area ✓
 Branch cables carrying 80 Amperes, comprised of 19 wires, each 14 L.S.G. diameter, 0.094 square inches total sectional area ✓
 Branch cables carrying 50 Amperes, comprised of 19 wires, each 17 L.S.G. diameter, 0.046 square inches total sectional area ✓
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each 17 L.S.G. diameter, 0.0025 square inches total sectional area ✓
 Cargo light cables carrying 16 Amperes, comprised of 19 wires, each 22 L.S.G. diameter, 0.0115 square inches total sectional area ✓

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors composed of 100% conductivity tinned copper insulated with pure & vulcanising India-rubber, taped, the whole vulcanised together & covered with specially heavy lead sheathing overall.
 Joints in cables, how made, insulated, and protected - No joints -

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 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 None.
 How are the cables led through the ship, and how protected Lead covered cable fastened to special steel cable plates under fore & aft gangway by means of brass clips secured by 1/2 dia. 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. Extra heavy lead sheathing throughout

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

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

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

How are cables carried through beams Through holes bushed w/ lead through bulkheads, &c. thru gunmetal packed glands

How are cables carried through decks Through special copper deck tubes w/ packed glands

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

If so, how are they protected By iron plate protection where necessary

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 Heavy wet glasses & strong brass guards

Where are the main switches and cut outs for these lights fitted In engine room

If in the spaces, how are they specially protected Not in spaces

Are any switches or cut outs fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Portable How fixed Attached to heavy watertight gunmetal switch & terminal boxes

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 —

The installation is two supplied with two voltmeters and two amperemeters fixed in engine room

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 Yes

Are any switches, cut outs, or joints of cables fitted in the pump room or companion No

How are the lamps specially protected in places liable to the accumulation of vapour or gas Extra heavy gaslight fittings used with strong guards. Cable lead in screwed tubing into fitting.

The copper used is guaranteed to have a conductivity of 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 1000 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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

H. Wright

Electrical Engineers

Date March 13/1917

COMPASSES.

DIRECTOR.

Distance between dynamo or electric motors and standard compass 122 ft

Distance between dynamo or electric motors and steering compass 114 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	<u>0.3</u> Amperes	<u>3</u> feet from standard compass	<u>4</u> feet from steering compass
A cable carrying	<u>10.0</u> Amperes	<u>8</u> feet from standard compass	<u>6</u> feet from steering compass
A cable carrying	<u>15.0</u> Amperes	<u>12</u> feet from standard compass	<u>10</u> 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.

W. Strachan

Builder's Signature.

Date 15. 3. 17

GENERAL REMARKS.

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

It is submitted that

this vessel is eligible for

THE RECORD, Elec. light.

H.W.D.
19/3/17

R. F. Beveridge

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

Committee's Minute

FRI. 26. APR. 1918

FRI. 24. MAR.

FRI. 19. SEP. 1919



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REPORT FORM No. 13.—5m, 34.

THE SURVEYORS ARE REQUESTED TO WRITE ACROSS THIS MARGIN.