

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 28197

Port of Sunderland Date of First Survey July 15 Date of Last Survey Nov 10 21 No. of Visits 6
 No. in Reg. Book 36036 on the Steel s/s. "ZENON" Port belonging to La Rochelle, France
 Built at Sunderland By whom Sunderland S.B. Co. Ltd. When built 1921
 Owners Cie de Nav. d'Orbigny (H. Capelle) Owners' Address 81 Rue Taitbout, Paris, France
 Yard No. 323 Electric Light Installation fitted by Sunderland S.B. Co. Ltd When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

one Standard combined plant consisting of open Insulated type Cylinder Engine 8" dia x 6" Stroke direct coupled to Mulliplex Compound Wound Dynamo having an output of 125 Amps at 100 Volts at 320 r.p.m.
 Capacity of Dynamo 125 Amperes at 100 Volts, whether continuous or alternating current Direct
 Where is Dynamo fixed Star Side Engine Room Bottom platform Whether single or double wire system is used Double
 Position of Main Switch Board At Engine Room B. Head having switches to groups A, B, C, D, E & F of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Navigation Tiller Tack Indicator Wheel House 5 Switches
Engine Room Bottom Platform 9 Switches

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 194 arranged in the following groups:—

Group	Description	Number of Lights	Wattage	Candle Power	Current (Amps)
A	ENGINEERS	43	40Watt metal Fil	17.2	17.2
B	SALOON & CAPT	36	60 " "	21.6	21.6
C	ENGINE ROOM & BOILER ROOM	59	40 " "	23.6	23.6
D	APT ACCOMMODATION	36	40 " "	14.4	14.4
E	NAVIGATION	15	16 Carbon Lamps	9.3	9.3
F	WIRELESS	2	Mast head light with 1 lamps each	32	2.5
		2	Side light with 1 lamps each	32	2.5
		5	Cargo lights of 500Watt 1/2 Watt metal Fil		

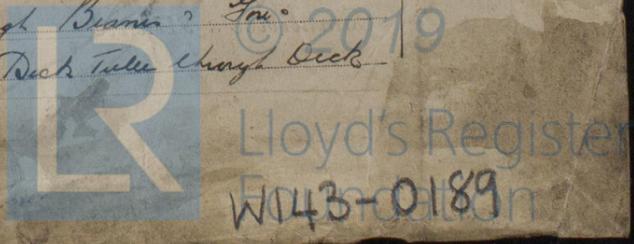
If arc lights, what protection is provided against fire, sparks, &c. W
 Where are the switches controlling the masthead and side lights placed Navigation Tiller Tack Wheel House.

DESCRIPTION OF CABLES.

Current	Wires	Diameter	Total Sectional Area
Main cable carrying 125 Amperes	37	16 S.W.G. diameter, .117	square inches total sectional area
Branch cables carrying 21.6 Amperes	7	18 S.W.G. diameter, .025	square inches total sectional area
Branch cables carrying 14.4 Amperes	7	20 S.W.G. diameter, .0070	square inches total sectional area
Leads to lamps carrying 6 Amperes	3	20 S.W.G. diameter, .0030	square inches total sectional area
Cargo light cables carrying 10 Amperes	7	20 S.W.G. diameter, .0070	square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Arman. Braided Cable through Treen Decks, Galley Engine room Stokers Summit. Crew Spaces
 Lead covered Engineers Accdn for. Para side Saloon Navigation
 Joints in cables, how made, insulated, and protected none
 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 Arman. Braided Cable through Beams & Gun. after Beam, under main Deck. Holes in Beams Bushed Red Fibre. Deck Tiller through Deck



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
no cable fitted in these places

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Arman. Braided

What special protection has been provided for the cables near boiler casings Arman. Braided

What special protection has been provided for the cables in engine room Arman. Braided

How are cables carried through beams Now drilled - Bushed Red Fibre through bulkheads, &c. Packed Bulk Head Plates

How are cables carried through decks Deck Sides

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 Arman. Braided Cable

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 plug Boxes Mast Houses

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 Main Switch board

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.

FOR THE SUNDERLAND SHIPBUILDING CO. LTD.

John Isbach Secretary

Electrical Engineers

Date 16 Nov. 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass 118

Distance between dynamo or electric motors and steering compass 108

The nearest cables to the compasses are as follows:—

A cable carrying	<u>9.3</u>	Amperes	<u>18</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>Lead into</u>	feet from standard compass	<u>10</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>10</u>	feet from standard compass	<u>Lead into</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 no degrees on any course in the case of the standard compass and no degrees on any course in the case of the steering compass.

FOR THE SUNDERLAND SHIPBUILDING CO. LTD.

John Isbach Builder's Signature

Builder's Signature.

Date 16 Nov. 1921

GENERAL REMARKS.

SECRETARY.

The installation has been satisfactorily fitted in the vessel, tested and found good.

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

Elec. Light

Fee £ 13-0-0

Applied for 11th Nov. 1921

24/11/21

S. Davis

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

