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## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8341

Port of Belfast Date of First Survey 1919 Oct. 14 Date of Last Survey 1919 Nov. 17 No. of Visits 12  
 No. in on the Iron or Steel S.S. "Kenbane Head" Port belonging to Belfast  
 Reg. Book Built at Belfast By whom Workman, Clark & Co. Ltd., When built 1919  
 Owners Ulster S/S. Co. Ltd., Owners' Address Belfast.  
 Yard No. 445 Electric Light Installation fitted by The Sunderland Forge & Eng. Co. Ltd. When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One Compound Wound Multipolar Dynamo, direct coupled to Vertical Open Type Single Cylinder Steam Engine on combined bedplate.

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 six of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1 in Wheelhouse - 8 switches  
1 " Engine Room - 10 "

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 yes

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 181 arranged in the following groups:—

A	38	lights each of	16	candle power requiring a total current of	22.8	Amperes
B	37	lights each of	16	candle power requiring a total current of	22.2	Amperes
C	36	lights each of	16	candle power requiring a total current of	21.6	Amperes
D	70	lights each of	16	candle power requiring a total current of	42.0	Amperes
E	2 Arc	lights each of		candle power requiring a total current of	20.0	Amperes
F	Wireless Installation.				30.0	
	2	Mast head light with 1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
	2	Side lights with 1 lamps each of	32	candle power requiring a total current of	2.4	Amperes

2 Arc Lamps & 36 Cargo lights of 16 candle power, whether incandescent or arc lights both

If arc lights, what protection is provided against fire, sparks, &c. Heavy glass guards in Metal Lanterns

Where are the switches controlling the masthead and side lights placed In Wheelhouse on Bridge.

## DESCRIPTION OF CABLES.

Main cable carrying	100	Amperes, comprised of	19	wires, each	14	L.S.G. diameter, .09372	square inches total sectional area
Branch cables carrying	30	Amperes, comprised of	19	wires, each	20	L.S.G. diameter, .01899	square inches total sectional area
Branch cables carrying	10	Amperes, comprised of	7	wires, each	20	L.S.G. diameter, .007005	square inches total sectional area
Leads to lamps carrying	2.4	Amperes, comprised of	7	wires, each	25	L.S.G. diameter, .0021	square inches total sectional area
Cargo light cables carrying	10	Amperes, comprised of	114	wires, each	38	L.S.G. diameter, .00319	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned Copper Conductors Insulated with pure and vulcanised india rubber, taped and the whole vulcanised together and finished as follows:— In accommodation — Lead Covered & Braided

Machinery Spaces — Lead Covered, Armoured and braided.

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 No

How are the cables led through the ship, and how protected Drawn into screwed galvanised wrought iron pipe made watertight.

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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 Through Deck Tubes made watertight.

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 by screwed galvanised wrought iron pipe made watertight.

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 cut outs for these lights fitted

If in the spaces, how are they specially protected

Are any switches or cut outs fitted in bunkers

Cargo light cables, whether portable or permanently fixed

Portable

How fixed To heavy brass terminal fitted in c.i. box 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

The installation is yes supplied with a voltmeter and yes

an amperemeter, 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

Are any switches, cut outs, 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 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 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.

The Sunderland Forge & Eng. Co. Ltd.;

Electrical Engineers

Date December 1919

COMPASSES.

Distance between dynamo or electric motors and standard compass

96

Distance between dynamo or electric motors and steering compass

90

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>9</u>	<u>6</u>	<u>6</u>	<u>6</u>
<u>0.2</u>	<u>3</u>	<u>3</u>	<u>3</u>
<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

1/2 degrees on

all course in the case of the

standard compass and all course in the case of the steering compass.

Builder's Signature. Date

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.

4/6/20

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

Committee's Minute