

THU. MAR. 22 1923

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 28455

Port of Sunderland Date of First Survey Oct 27 Date of Last Survey Nov 8 '22 No. of Visits 3
 No. in on the Iron or Steel "CAIRN TORR" Port belonging to Newcastle on Tyne
 Reg. Book ca "Alabama"
 Built at Sunderland By whom The Sunderland S. B. Co Ltd When built 1923
 Owners The Cairn Line of Steamships Ltd Owners' Address Newcastle-on-Tyne
 Yard No. 325 Electric Light Installation fitted by Messrs Sunderland S. B. Co Ltd When fitted 1923

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Inverted open type cylinder engines, cylinders 8" dia by 6" stroke, direct coupled to multipolar compound wound generator.

Total Capacity of Dynamos 225 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where is Dynamo fixed Starboard side engine room Whether single or double wire system is used Double
 Position of Main Switch Boards Engine room bulkhead having switches to groups A.B.C.D.E + F.G.H of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Navigation Indicator (5 switches) in wheelhouse
Engine room 9 switches, Mast-houses for lights between decks 18 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 205 arranged in the following groups:—

A	Saloon	29	lights each of	40	candle power requiring a total current of	11.6	Amperes
B	Engineers' stft	78	lights each of	40	candle power requiring a total current of	31.0	Amperes
C	Engine room	41	lights each of	40	candle power requiring a total current of	12.3	Amperes
D	Navigation	27	lights each of	40	candle power requiring a total current of	10.8	Amperes
E	Wireless	5	lights each of	16	candle power requiring a total current of	20	Amperes
F	Cargo	2	Mast head light with 1 lamps each of	32	candle power requiring a total current of	2.5	Amperes
		2	Side light with 1 lamps each of	32	candle power requiring a total current of	2.5	Amperes
		5	Cargo lights of 6 - 16		candle power, whether incandescent or arc lights	incandescent	

If arc lights, what protection is provided against fire, sparks, &c. none fitted

5 - 500 Watt 1/2 Watt desk lights fitted, Port & Starboard side, Fore & Main Mast, Bridge (aft)

Where are the switches controlling the masthead and side lights placed Wheelhouse

DESCRIPTION OF CABLES.

Main cable carrying	125	Amperes, comprised of	37	wires, each	16	S.W.G. diameter,	.117	square inches total sectional area
Branch cables carrying	31	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.022	square inches total sectional area
Branch cables carrying	30	Amperes, comprised of	7	wires, each	18	S.W.G. diameter,	.025	square inches total sectional area
Leads to lamps carrying	5	Amperes, comprised of	3	wires, each	20	S.W.G. diameter,	.003	square inches total sectional area
Cargo light cables carrying	16	Amperes, comprised of	7	wires, each	16	S.W.G. diameter,	.025	square inches total sectional area
	2	Star cables each	37				.022	

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Pure vulcanized rubber, Armoured & Braided cables in cargo & machinery spaces
 aft Crew accommodation, Lead covered in midship saloon accommodation.

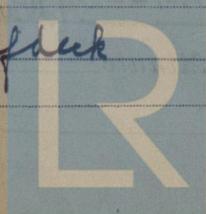
Joints in cables, how made, insulated, and protected

None, except mechanical

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 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 clipped to underside of deck



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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 Vulcanised rubber cable in galvanised iron pipe

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

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

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

How are cables carried through beams Brushed red fibre ✓ through bulkheads, &c. watertight glands ✓

How are cables carried through decks Deck tubes ✓

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 Armoured 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 Cast iron fitting & hinged covers

Where are the main switches and fuses for these lights fitted Main houses

If in the spaces, how are they specially protected no ✓

Are any switches or fuses fitted in bunkers no

Cargo light cables, whether portable or permanently fixed Portable How fixed Plug boxes

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 boards

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.

THE SUNDERLAND SHIPBUILDING CO. LD Electrical Engineers Date Feb'y 1923

COMPASSES.

Distance between dynamo or electric motors and standard compass 100 ft

Distance between dynamo or electric motors and steering compass 90 ft

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>12</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>led into</u>	feet from standard compass	<u>6</u>	feet from steering compass
A cable carrying	<u>.56</u>	Amperes	<u>6</u>	feet from standard compass	<u>led 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. LD Sam'l Tochaich Builder's Signature. Date March 5th 1923

GENERAL REMARKS.

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. 27/3/23

£ 13.0.0 £ 6.0.0
 Applied for 9/11/22 Applied for 27/3/23
 Paid 17/11/22 K.W.W. Not yet paid
S.C. Davis
 Surveyor to Lloyd's Register of Shipping.

Im. 710.—Transfer.

Committee's Minute



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.