

REC'D. 9 AUG. 1922

Received at London Office

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8476

Port of Belfast Date of First Survey 15th May 1922 Date of Last Survey 29th June 1922 No. of Visits Eight  
 No. in on the Iron & Steel Trini's "PORT AUCKLAND" Port belonging to London  
 Reg. Book Built at Belfast By whom Hockman Clark & Co. When built 1922  
 Owners The Commonwealth & Dominion Line Owners' Address Leckwith Avenue, London  
 Yard No. 382 Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd. When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

TWO - 26 K.W. Compound Wound Multipolar Dynamos direct coupled to Open type Steam Engines with Governors on crank shaft.

Capacity of Dynamo 260 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed In Main Engine Room Whether single or double wire system is used Double

Position of Main Switch Board In Main Engine Room having switches to groups Eight of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each One in Wheelhouse - 11 Switches

" " Engine Room - 10 Switches

" " Boiler Room - 8 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 yes 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 398 arranged in the following groups:—

A Nav. & Saloon	76	lights each of 16 & 3 @ 32	candle power requiring a total current of	27.9	Amperes
B Wireless		lights each of —	candle power requiring a total current of	30.0	Amperes
C Crew & Engrs.	121	lights each of 16 and 4 @ 32	candle power requiring a total current of	41.1	Amperes
D Cargo Ford.	50	lights each of 16	" " " " " "	30.0	"
E Cargo Aft.	35	lights each of 16	candle power requiring a total current of	21.0	Amperes
F E & Boiler Rms	109	lights each of 16	candle power requiring a total current of	42.6	Amperes
G Lathe Motor			" " " " " "	40.	"
H Mast head light	2	lamps each of 32	candle power requiring a total current of	1.2 (each)	Amperes
I Side light	2	lamps each of 32	candle power requiring a total current of	1.2 (each)	Amperes
J Cargo lights	18	each of 5 lts @ 16	candle power, whether incandescent or arc lights	Incandescent	

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 232.6 Amperes, comprised of 61 wires, each .093" S.W.G. diameter, .4 square inches total sectional area  
 Branch cables carrying 42.6 Amperes, comprised of 19 wires, each .064" S.W.G. diameter, .06 square inches total sectional area  
 Branch cables carrying 30.0 Amperes, comprised of 7 wires, each .064" S.W.G. diameter, .022 square inches total sectional area  
 Leads to lamps carrying 0.9 Amperes, comprised of 3 wires, each .029" S.W.G. diameter, .002 square inches total sectional area  
 Cargo light cables carrying 3.0 Amperes, comprised of 72 wires, each .0076 S.W.G. diameter, .003 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

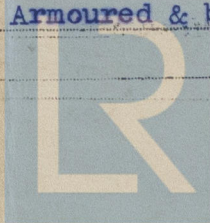
Tinned Copper Conductors, insulated with pure and vulcanised india rubber, taped, braided and the whole vulcanised together and finished:— In Accommodation — Lead Covd. and Braided.  
In Machinery Spaces — Lead Covd. Armoured and braided.

Joints in cables, how made, insulated, and protected None fitted

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 —

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 Mains cables — Lead Covered, Armoured & braided run along Upper Deck, and secured by substantial galvanised saddles.



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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 Cables.**

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Covered, Armoured & Braided.

What special protection has been provided for the cables near boiler casings None fitted near casings

What special protection has been provided for the cables in engine room Lead Covered, Armoured and Braided.

How are cables carried through beams Holes bushed with fibre through bulkheads, &c. Watertight packing glands

How are cables carried through decks In deck tubes made watertight

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

If so, how are they protected -

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 In watertight 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 On Main Switchboard

**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 2500 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.

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

*R. H. Bough* Electrical Engineers

Date 7th August 1922.

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 120 feet

Distance between dynamo or electric motors and steering compass 116 "

The nearest cables to the compasses are as follows:—

A cable carrying Amperes feet from standard compass feet from steering compass

A cable carrying 6 Amperes 8 feet from standard compass 4 feet from steering compass

A cable carrying .2 Amperes 2 feet from standard compass 2 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 ✓ course in the case of the standard compass and Nil degrees on ✓ course in the case of the steering compass.

Builder's Signature.

Date

**GENERAL REMARKS.**

*This installation is a good description and is fitted in accordance with the Rules.*

*It is submitted that this vessel is eligible for TALL SHROUD. Elec. Light*

*A. P. Southwell*

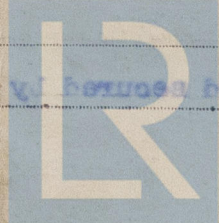
*A.H.B.*

Surveyor to Lloyd's Register of Shipping.

Fee: £27:14:0

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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