

MAR. 15 1922

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8705

Port of Belfast Date of First Survey 25<sup>th</sup> Oct. 1921 Date of Last Survey 23<sup>rd</sup> Feb. 1922 No. of Visits 15  
 No. in on the T.S.S. Orana Port belonging to Amsterdamsche  
 Reg. Book Belfast By whom Workman Clark & Co. Ltd. When built 1922  
 Owners Koninklijke Hollandse Lloyd Owners' Address Holland  
 Yard No. 379 Electric Light Installation fitted by Lundenland Forge Co. Ltd. When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

3 - 75 K.W. Steam Turbo Generating Sets complete with gearing

Capacity of Dynamo 680 Amperes at 110 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed In Main Engine Room Whether single or double wire system is used Single  
 Position of Main Switch Board In Main Engine Room having switches to groups Twenty two of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each In Chart Room - 13 switches.  
Shelter Deck Entrance - 14 switches; Boat Deck Entrance - 6 switches; 1st class Music  
Room port - 12 switches and 1st class music room starboard - 12 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 -  
 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 buses yes  
 Total number of lights provided for 1749 arranged in the following groups:-

SEE ATTACHED SHEET

	lights each of	candle power requiring a total current of	Amperes
A			
B			
C			
D			
E			
2	Mast head light with 1 lamp each of 32	candle power requiring a total current of each 1.2	Amperes
2	Side light with 1 lamp each of 32	candle power requiring a total current of each 1.2	Amperes
4-61t at 16 c.p	Cargo lights of & 4 at 2,000	candle power, whether incandescent or arc lights incandescent	

If arc lights, what protection is provided against fire, sparks, &amp;c.

Where are the switches controlling the masthead and side lights placed In Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying	680	Amperes, comprised of	127	wires, each	.112"	S.W.G. diameter,	1.25	square inches total sectional area
Branch cables carrying	203	Amperes, comprised of	37	wires, each	.093"	S.W.G. diameter,	.25	square inches total sectional area
Branch cables carrying	36.8	Amperes, comprised of	19	wires, each	.052"	S.W.G. diameter,	.04	square inches total sectional area
Leads to lamps carrying	1.2	Amperes, comprised of	3	wires, each	.029"	S.W.G. diameter,	.002	square inches total sectional area
Cargo light cables carrying	3.3	Amperes, comprised of	70	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 and the whole vulcanised together and finished:- on Accommodation - Lead covered and braided over-all. In machinery spaces etc. - lead covered armoured and braided.

Joints in cables, how made, insulated, and protected

No joints.

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 On wood grounds, secured to deck beams, along main 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 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 covered armoured & Braided

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

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. W.T. packing glands

How are cables carried through decks In Deck tubes made W.T.

Are any cables run through coal bunkers — or cargo spaces — or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead covered armoured and braided cables.

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 By substantial C.I. dead lights

Where are the main switches and fuses for these lights fitted In distribution box. Shelter deck 3rd class Entrance

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers

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 sweated into heavy brass lugs bolted

How are the returns from the lamps connected to the hull sweated to brass washers, screwed to hull. (to hull

Are all the joints with the hull in accessible positions Yes

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 2,500 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.

*R. H. Gough*

Electrical Engineers

Date 9th March, 1922

COMPASSES.

Distance between dynamo or electric motor and standard compass 30 feet

Distance between dynamo or electric motor and steering compass 22 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
50	16	22	
.56	3	3	

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.

Builder's Signature.

Date 13th March 1922

GENERAL REMARKS.

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

It is submitted that

Fee £ 37-2-6

Advised 10-3-22

this vessel is eligible for THE RECORD. Elec. Lights.

*L. F.*  
20/3/22

*R. F. Beveridge*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.