

## REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 27614

Port of Sunderland Date of First Survey 10 Sept. Date of Last Survey 15 Sept. 19 No. of Visits 2  
 No. in Reg. Book on the Iron or Steel " DAGENHAM Port belonging to Londons  
 Built at SUNDERLAND By whom Messrs Daloune & Gahan & Co. Ltd When built 1919  
 Owners John Hudson & Co. Owners' Address 60. Ltd  
 Yard No. 259 Electric Light Installation fitted by Messrs Falconar Cross & Co. When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Newcastle-on-Tyne.

1. 4 x 6 Open type engine direct coupled to a compound wound multipolar dynamo. Steam pressure 100 lbs per sq. in. 330 R.P.M.  
 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 wire  
 Position of Main Switch Board In engine room having switches to groups A. B. C. D & E of lights, &c., as below  
 Positions of auxiliary <sup>fuse</sup> boards and numbers of <sup>fuses</sup> on each 3-way section Boxes:- Steering Gear 2. 10-way  
D.B:- Chart Room 1. 4-way D.B:- Eng. Room 1, Accom: Aft 1. 5-way D.B:- Saloon  
Accom: 1. 3-way D.B's Saloon Accom: 1, Steering Gear 1, Forecastle 1.

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-oxidisable metal yes and constructed to fuse at an excess of 50 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 51 @ 16 CP. 32 @ 32 arranged in the following groups:-

A Cargo.	24 lights each of	32	candle power requiring a total current of	24	Amperes
B Accom:	52 } lights each of	16	candle power requiring a total current of	29	Amperes
	3 } lights each of	32			
C Wireless.	— lights each of	—	candle power requiring a total current of	5	Amperes
D Navigation	4 } lights each of	16	candle power requiring a total current of	8.5	Amperes
	5 } lights each of	32			
E Engine and Boiler Rooms	21 lights each of	16	candle power requiring a total current of	10.5	Amperes
2 Mast head light with	1 lamps each of	32	candle power requiring a total current of	2	Amperes
2 Side light with	1 lamps each of	32	candle power requiring a total current of	2	Amperes
4 Cargo lights of	6 - 32		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 chart room

## DESCRIPTION OF CABLES.

Main cable carrying 44 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 29 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .022 square inches total sectional area  
 Branch cables carrying 24 Amperes, comprised of 4 wires, each 18 S.W.G. diameter, .0125 square inches total sectional area  
 Leads to lamps carrying 5 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying 6 Amperes, comprised of 114 wires, each 38 S.W.G. diameter, .0032 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered and armoured and braided cables. Tinned copper conductors. insulated with pure para rubber vulcanised india-rubber taped and braided.

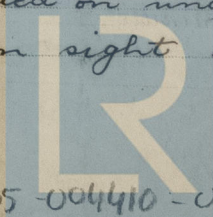
Joints in cables, how made, insulated, and protected

No joints made.

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

How are the cables led through the ship, and how protected Steel armoured cables led on underside of decks, through beams and on bulkheads. all in sight.





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 (1) Steel armoured & braided cables (2) Carried in S. I. pipes.

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

What special protection has been provided for the cables near boiler casings steel armoured & braided.

What special protection has been provided for the cables in engine room steel armoured & braided

How are cables carried through beams Bushed holes through bulkheads, &c. Watertight glands.

How are cables carried through decks Watertight deck tubes.

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

If so, how are they protected In Bunkers:- Carried in 2" S. I. pipe. In Cargo spaces etc:- Steel (armoured cables led between beams)

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 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 amperometer yes, fixed on 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 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.

Falconar, Conn. J.

Electrical Engineers

Date 2.10.19.

COMPASSES.

Distance between dynamo or electric motors and standard compass

65-0

Distance between dynamo or electric motors and steering compass

62-0

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
8.5	12	9	
1.5	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.

OSBOURNE GRAHAM & CO. LIMITED.

M. Hutton

Builder's Signature.

Date Oct 7<sup>th</sup> 19.

GENERAL REMARKS.

This installation appears to have been fitted in a satisfactory manner and in accordance with the rules.

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

JWD  
24/10/19.

W. Staki

Surveyor to Lloyd's Register of Shipping.

Committee's Minute