

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27560.

Port of Sunderland Date of First Survey 10.4.19 Date of Last Survey 1.7.19 No. of Visits 3  
 No. in on the Iron or Steel S.S. "Matadi" Port belonging to Liverpool  
 Reg. Book Built at Sunderland By whom Messrs Robt. Thompson & Sons When built 1919  
 Owners Wm. Elder Phipps & Co. Ltd. Owners' Address Edmund House, 20 Water St. Liverpool  
 Yard No. 309 Electric Light Installation fitted by Messrs. Falconar, Cross & Co. When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Newcastle-on-Tyne.  
 1. 4 x 5" Open Type engine coupled direct to a compound wound multipolar dynamo. steam pressure 100 lbs per sq. in. 360 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 ~~switch~~ <sup>fuse</sup> boards and numbers of ~~switches~~ <sup>fuses</sup> on each 5-way Section Box:- Saloon Pass: 1. 3-way section Boxes:- Steer: Eng: 2. 9-way Dis: Boards:- Eng: Rm: 1, Saloon Pass: 1, Chart Rm: 1. 4-way Dis: Board:- Accom: aft 1. 3-way Dis: Board:- Steer: Engine 1. 2-way Dis: Board:- 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 135. arranged in the following groups:-  

A Cargo.	32	lights each of	$\frac{2}{30} - 1000.$	candle power requiring a total current of	25.	Amperes
B Accom:	56	lights each of	16.	candle power requiring a total current of	28.	Amperes
C Wireless.	—	lights each of	—	candle power requiring a total current of	15.	Amperes
D Navigation.	19	lights each of	16.	candle power requiring a total current of	9.5.	Amperes
E Engine and Boiler Rooms.	28	lights each of	16.	candle power requiring a total current of	14.	Amperes
2.	Mast head light with	1	lamps each of	32	candle power requiring a total current of	2
2.	Side light with	1	lamps each of	32	candle power requiring a total current of	2
5.						
2.	Cargo lights of		$\frac{6}{1} - 16$ $1 - 1000$	candle power, whether incandescent or arc lights	incandescent	

  
 If are lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed In wheel house.

## DESCRIPTION OF CABLES.

Main cable carrying	91.5	Amperes, comprised of	19	wires, each	14.	S.W.G. diameter,	.094.	square inches total sectional area
Branch cables carrying	28.	Amperes, comprised of	4	wires, each	16.	S.W.G. diameter,	.022.	square inches total sectional area
Branch cables carrying	15	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	3.	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. Sinned copper conductors insulated with pure para rubber, vulcanised india rubber taped and braided.  
 Joints in cables, how made, insulated, and protected No joints made. bags wrapped ends

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 Steel armoured and braided 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 In open alleyways —  
armoured cables. Where exposed to weather — carried through S.I. Pipes

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 Bushed holes through bulkheads, &c. Watertight Glands.

How are cables carried through decks Watertight Deck Pipes.

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 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 amperemeter 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.

Galeman Crank Electrical Engineers Date 30.6.19.

COMPASSES.

Distance between dynamo or electric motors and standard compass —

Distance between dynamo or electric motors and steering compass —

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	9
5	3	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 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.

J. H. Thompson Director Builder's Signature. Date 2<sup>nd</sup> July 1919

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel, tested at full load and found good.

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

J. W. D. 23/7/19.

S. C. Davis.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute