

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 75160

Port of NEWCASTLE-ON-TYNE Date of First Survey 12/10/21 Date of Last Survey 24/11/21 No. of Visits 8
 No. in on the Steel S.S. City of Pittsburgh Port belonging to Liverpool
 Reg. Book Supp. 36724 Built at Newcastle By whom Messrs Palmers & Co Ltd When built 1922
 Owners The Ellerman Steamship Co. Owners' Address Liverpool
 Yard No. 919 Electric Light Installation fitted by Messrs Palmers & Co Ltd Newcastle When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Generating set by Messrs Clarke Chapman & Co Ltd consisting of vertical open fronted double acting single cylinder engine with 8" dia cylinders & 8" stroke directly coupled to 20KW multipolar compound wound dynamo. Speed 300 r.p.m.

Capacity of Dynamo 200 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed on flat in Engine Room port Whether single or double wire system is used double

Position of Main Switch Board Engine room, 2nd deck level having switches to groups seven of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1-4 way + 1-9 way dis boxes in engine room, 2-3 way Section

1-8 way distribution + 1-4 way dis boxes in Engine room passage Stbd, 1-10 way dis box in fireroom qto, 1-8 way +

1-5 way dis box in Stbd passage of bridge, 1-6 way dis box in Chart house, 1-5 way navigation light installation in wheel house

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 3-10% to 200% 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 150 incand lights arranged in the following groups:—

A Engine & Stbd Room 45 lights	each of 5-2000, 3-1100, 8-8	candle power requiring a total current of	23.6	Amperes
+ Oil Separator motor	motor of 1 hp.	" " " "	9.4	
B Navigation lights 16 lights	each of 5-40, 8-32	candle power requiring a total current of	8.65	Amperes
C Cargo lights 20	each of 2-800, 2-1100, 24-200, 1-300	" " " "	10.0	Amperes
D Office & Engine room 55 lights	each of 1-100, 5-200, 2-2000	candle power requiring a total current of	16.76	Amperes
E Deck lights 2	each of 2-2000	" " " "	20.0	Amperes
F Cargo lights 8	each of 1-1100, 1-800, 6-200	candle power requiring a total current of	7.68	Amperes
G Masthead light 1	each of 1-1100	candle power requiring a total current of	5.0	Amperes
H Side light 2	each of 1-1100	candle power requiring a total current of	2.3	Amperes
I Cargo lights 6	each of 2-200	candle power, whether incandescent or arc lights	2.3	Amperes

If arc 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 117.72 Amperes, comprised of 37 wires, each 0.064 diameter, 0.15 square inches total sectional area

A Branch cables carrying 25.6 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

B Branch cables carrying 8.65 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

C Branch cables carrying 10.0 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

D Leads to lamps carrying 16.76 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

E Cargo light cables carrying 20.0 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

F Cargo light cables carrying 7.68 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

G Cargo light cables carrying 15.0 Amperes, comprised of 7 wires, each 0.064 diameter, 0.125 square inches total sectional area

H Cargo light cables carrying 1 Amperes, comprised of 3 wires, each 0.064 diameter, 0.049 square inches total sectional area

I Cargo light cables carrying 1 Amperes, comprised of 3 wires, each 0.064 diameter, 0.049 square inches total sectional area

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S Cargo light cables carrying 1 Amperes, comprised of 3 wires, each 0.064 diameter, 0.049 square inches total sectional area

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W Cargo light cables carrying 1 Amperes, comprised of 3 wires, each 0.064 diameter, 0.049 square inches total sectional area

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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 *had covered around & shielded* ✓
 What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *do* ✓
 What special protection has been provided for the cables near boiler casings *do* ✓
 What special protection has been provided for the cables in engine room *do* ✓
 How are cables carried through beams *lead hooked slots & holes* ✓ through bulkheads, &c. *water-tight 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 *lead covered around & shielded* ✓
 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 to connection boxes* How fixed *fuses & switches kept in hand* ✓
 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 *in 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 *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.

Palmer's Shipbuilding & Iron Co. Electrical Engineers Date *June 17 1922*

COMPASSES.

Distance between dynamo or electric motors and standard compass *120 fms*
 Distance between dynamo or electric motors and steering compass *114 fms*
 The nearest cables to the compasses are as follows:—
 lead & return
 A cable carrying *.25* Amperes *6* feet from standard compass *on* *12* feet from steering compass
 A cable carrying *.25* Amperes *on* *6* feet from standard compass *6* feet from steering compass
 A cable carrying *.25* Amperes *6* feet from standard compass *on* *6* 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 *all* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

Thos. S. Simpson Builder's Signature. Date

GENERAL REMARKS. *The above installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation electric light & wireless*
It is submitted that this vessel is eligible for
THE RECORD. *The light*

See L 17, 10f. Applied for. 27/1/20.

31/1/22

W.T. Badger.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.