

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27063

Port of Sunderland Date of First Survey 20th Aug Date of Last Survey 5th Sept 17 No. of Visits 3
 No. in Reg. Book on the ~~Iron~~ Steel R. F. A. "Celerad" Port belonging to London
 Built at Sunderland By whom Messrs. Short Bros. Ltd. When built 1917
 Owners British Admiralty Owners' Address London
 Yard No. 410 Electric Light Installation fitted by The Sunderland Forge & Eng. Coy. Ltd. When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Combined Plants, each consisting of Vertical Compound Enclosed Engine coupled to Compound Wound Multipolar Dynamo. Supplied by the Admiralty.

Capacity of ^{each of 2} Dynamos 250 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room Bottom Platform Whether single or double wire system is used Double

Position of Main Switch Board Engine Room Aft Bulkhead Starboard Side having switches to groups Six of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each One outside Chart Room having 7 switches controlling lights as follows:- 1-Not Under Control lights, 1-Stern Overtaking lights, 1-Stern Anchor light, 1-Mainmast light, 1-Foremast light, 1-Port & Starboard Bow lights, & 1-Master Switch.

One auxiliary switchboard inside Chart Room having 6 switches controlling lights as follows:- 1-Chart Room lights, 1-Steering Pedestal, 2-Compass lights & 2-Telegraph lights.

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 100 per cent over the normal current

Are all fuses fitted in easily accessible positions Yes Are the fuses of standard dimensions No 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 210 arranged in the following groups:-
Searchlight Projector requiring a total current of 80.0 Amps
 A Accommodation lights each of 12-16 cp. metal, 1-8 cp. barlan requiring a total current of 33.0 Amperes

B Y.A. Reflectors. 32 lights each of 50 candle power requiring a total current of 15.0 Amperes

C Navigation lights each of 17-16 cp. barlan, 3-32 cp. " " candle power requiring a total current of 8.5 Amperes

D Wireless lights each of 12-16 cp. metal, 1-16 cp. barlan candle power requiring a total current of 30.0 Amperes

E Eng. & Boiler Rooms lights each of 13-16 cp. barlan, 1-8 cp. barlan candle power requiring a total current of 15.5 Amperes

2 Mast head light with 1 lamps each of 16 candle power requiring a total current of 1.12 Amperes

2 Side light with 1 lamps each of Port 16 Star 32 } candle power requiring a total current of 1.68 Amperes

4 Cargo lights, of 8 lights @ 50 candle power, whether incandescent or arc lights Incandescent

If arc lights, what protection is provided against fire, sparks, &c. None fitted

Where are the switches controlling the masthead and side lights placed

DESCRIPTION OF CABLES.

The size of this cable is stated to be as specified by the Admiralty and is that used for the leads connecting dynamos and switchboards and are short. The capacity of each dynamo (250 amperes) is in excess of the total possible load. The two dynamos can be connected in parallel if desired.

Main cable carrying 250 Amperes, comprised of 37 wires, each .092 diameter, .25 square inches total sectional area

Branch " " 15 each Amperes, comprised of 19 wires, each .08 diameter, .094 square inches total sectional area

Branch cables carrying 80 Amperes, comprised of 13 wires, each .08 diameter, .094 square inches total sectional area

" " 33 each Amperes, comprised of 13 wires, each .056 diameter, .064 square inches total sectional area

Leads to lamps carrying 56 Amperes, comprised of 1 wires, each .056 diameter, .0025 square inches total sectional area

Cargo light cables carrying 15 Amperes, comprised of 13 wires, each .056 diameter, .064 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Admiralty Pattern Lead Covered Cables throughout ship.

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

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substance Yes 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 Yes

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 Admiralty Pattern Lead Covered Cables cleated to Bulkheads with Admiralty Pattern Brass Clips.

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 *Admiralty Pattern Lead covered cables*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Ditto*

What special protection has been provided for the cables near boiler casings *Ditto*

What special protection has been provided for the cables in engine room *Ditto*

How are cables carried through beams *Holes lashed with fibre* through bulkheads, &c. *A.P. Watertight Glands.*

How are cables carried through decks *A.P. Watertight Deck Tubes.*

Are any cables run through coal bunkers *No* or cargo spaces *No* or spaces which may be used for carrying cargo, stores, or baggage *Yes*.

If so, how are they protected *A.P. Lead covered cables.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *- Baggage, Yes*

If so, how are the lamp fittings and cable terminals specially protected *A.P. Fittings with well glasses & brass guards.*

Where are the main switches and fuses for these lights fitted *Distribution Boxes*

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 Main S' Board.

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 *Yes.*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *No.*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Special A.P. Gastight Fittings*

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 *be to Admiralty Specifications and requirements* 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. PIR THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

Electrical Engineers

Date Oct. 10th 1917.

COMPASSES.

Distance between dynamo or electric motors and standard compass *100 feet*

Distance between dynamo or electric motors and steering compass *100 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
4.72	4	5	
1.12	led into	led into	

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.

FOR SHORT BROTHERS, LIMITED.

George C. Short

Builder's Signature.

Date October 17 1917

GENERAL REMARKS.

The installation has been satisfactorily fitted tested at full load and found good

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

JWD 23/10/17.

L.H. Davis

22 OCT 1917

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

See 717, Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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70 above 150 F. 2.2.