Rpt. 13.

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REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 68366

Port of Newcastle on Tyne Date of First Survey 2nd Dec 15 Date of Last Survey 2nd Feb 16 No. of Visits 10

No. in Reg. Book ____ on the Iron or Steel H.M.S. "PRIMULA" Port belonging to ____

Built at Wallsend on Tyne By whom Swan Hunter Wigham Richardson When built 1915-

Owners The Admiralty Owners' Address ____

Yard No. 1006 Electric Light Installation fitted by Swan Hunter Wigham Richardson When fitted 1915-6

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2- W. H. Allan Son & Co direct coupled generating plants. Engines compound, enclosed forced lubrication running at 500 r.p.m. Dynamos compound wound multipolar pattern.

Capacity of Dynamo 250 Amperes at 105 Volts, whether continuous or alternating current continuous

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

Position of Main Switch Board Engine Room having switches to groups 6 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each none

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 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 no

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 176 arranged in the following groups :—

A	Port Searchlight	____	lights each of	____	candle power requiring a total current of	80 Amperes
B	Star "	____	lights each of	____	candle power requiring a total current of	80 Amperes
C	Navigation	23	lights each of	1-32 c/p, 8-16 c/p, 4-8 c/p, 7-6 c/p, 3-2½ c/p	candle power requiring a total current of	9.5 Amperes
D	Crew	97	lights each of	16-50 c/p, 80-16 c/p, 1-8 c/p.	candle power requiring a total current of	21 Amperes
E	Engine & Boilers	53.	lights each of	53-16 c/p.	candle power requiring a total current of	27 Amperes
F	Wireless Telegraphy	3.		3-16 c/p.		1.5.
2	Mast head light with	1	lamps each of	16 c/p	candle power requiring a total current of	.5 Amperes
2	Side light with	1	lamps each of	16 c/p.	candle power requiring a total current of	.5 Amperes
1-	overtaking light	1	" " "	32 c/p	" " " " "	1 "
2	Cargo lights of	800	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 Wheel House.

DESCRIPTION OF CABLES.

Main cable carrying	250	Amperes, comprised of	37	wires, each	12	S.W.G. diameter, .313 / .3 square inches total sectional area
Branch cables carrying	80	Amperes, comprised of	19	wires, each	14	S.W.G. diameter, .094 square inches total sectional area
Branch cables carrying	17	Amperes, comprised of	19	wires, each	17	S.W.G. diameter, .046 square inches total sectional area
Leads to lamps carrying	5	Amperes, comprised of	1	wires, each	17	S.W.G. diameter, .00246 square inches total sectional area
Cargo light cables carrying	14	Amperes, comprised of	19	wires, each	20	S.W.G. diameter, .019 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Mains & Branch Cables Admiralty Pattern. Lead Covered. Cables in machinery spaces or spaces exposed to dampness lead covered. Cables in Crew Spaces 600 Megohm Grade Vulcanized Indian Rubber Braided tun in casing.

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 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 Clipped to grounds with brass clips 12" apart. Cables lead covered. Crew Spaces V.I.R. in Casing

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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 lead covering

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

What special protection has been provided for the cables near boiler casings lead covering

What special protection has been provided for the cables in engine room lead covering

How are cables carried through beams bushed holes *through bulkheads, &c.* Bulkhead Glands

How are cables carried through decks 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* no

If so, how are they protected ——

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* 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° Farhenheit 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.

Messrs Swan Hunter & Wigham Richardson Wallsend **Electrical Engineers** Date Feb 2nd. 16.

COMPASSES.

Distance between dynamo or electric motors and standard compass 38 feet to small motor taking 3.5 amps

Distance between dynamo or electric motors and steering compass 30 " " " " 3.5 "

The nearest cables to the compasses are as follows:—

A cable carrying 60	*Amperes* 15	*feet from standard compass* 12	*feet from steering compass*
A cable carrying 80	*Amperes* 15	*feet from standard compass* 12	*feet from steering compass*
A cable carrying 20	*Amperes* 18	*feet from standard compass* 12	*feet from steering compass*

Have the compasses been adjusted with and without the electric installation at work at full power Yes. to the satisfaction of Admiralty Officers.

The maximum deviation due to electric currents, etc., was found to be ____ *degrees on* ____ *course in the case of the standard compass and* ____ *degrees on* ____ *course in the case of the steering compass.*

SHIPBUILDERS & ENGINEERS WALLSEND-ON-TYNE. DATE PLAN No. ENGINEER'S OFFICE.

F. Wildsmith **Builder's Signature.** Date Feb. 2nd. 16

GENERAL REMARKS.

The materials and workmanship are good. On completion the installation was tested and found to work satisfactorily.

It is submitted that this vessel is eligible for THE RECORD Elec. light. JWD 8/2/16

Wm R. Austin.

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

Lm.9.12.—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.