

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 27356

Port of SUNDERLAND. Date of First Survey 8 Oct. Date of Last Survey 15 Oct. 18 No. of Visits 3
 No. in Reg. Book on the Iron or Steel "WAR TANK" Port belonging to Lidon
 Built at SUNDERLAND. By whom SWAN HUNTER & WIGHAM RICHARDSON When built 1918
 Owners Shipping Controller Owners' Address _____
 Yard No. 1040 Electric Light Installation fitted by SWAN HUNTER & WIGHAM RICHARDSON Ltd When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One steam driven direct coupled electric generating plant 10 K.W. 100 Volts. 360 Revs. Engine & Dynamo by Sunderland Forge Co. Engine open type single cylinder double acting 4" dia x 5" stroke. Dynamo multipolar compound wound.

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed Engine Room Stbd Whether single or double wire system is used Double
 Position of Main Switch Board Engine Room Stbd having switches to groups 5 of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each _____

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 108 arranged in the following groups:—

A Navigation	9 lights each of 4-32 cp, 5-16 cp	candle power requiring a total current of	7.5	Amperes
B Cabin & Crew	56 lights each of 2-32 cp, 54-16 cp	candle power requiring a total current of	19.5	Amperes
C Engines & Aids	17 lights each of 16	candle power requiring a total current of	11.4	Amperes
D Cargo	24 lights each of 16	candle power requiring a total current of	14.4	Amperes
E Wireless Telegraphy	lights each of _____	candle power requiring a total current of	15	Amperes
1 Mast head light with	1 lamps each of 32	candle power requiring a total current of	1	Amperes
2 Side light with	1 lamps each of 32	candle power requiring a total current of	2	Amperes
4 Cargo lights of	96	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 Bridge

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area
 Branch cables carrying 19.5 Amperes, comprised of 7 wires, each 14 S.W.G. diameter, .03459 square inches total sectional area
 Branch cables carrying 15 Amperes, comprised of 7 wires, each 17 S.W.G. diameter, .01695 square inches total sectional area
 Leads to lamps carrying 2 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .00181 square inches total sectional area
 Cargo light cables carrying 3.6 Amperes, comprised of 108 wires, each 38 S.W.G. diameter, .003217 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

600 Meg. grade, Rubber Insulated, Taped, Vulcanised Armoured & Braided cable. Mains Armoured & Braided clipped direct to steelwork. Cables in accommodation lead covered, clipped to woodwork. cables in Engine Rooms Boiler Rooms armoured & braided clipped to steelwork. cables exposed to weather lead covered & armoured clipped to steelwork

Joints in cables, how made, insulated, and protected _____

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 Mains run through Midship Accommodation Stbd Passage Feeds to Fore & Poop run along bulwarks

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 covered and armoured

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. 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 _____

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.

Swan Hunter, Wigham Richardson Electrical Engineers Date October 16th 1918

COMPASSES.

Distance between dynamo or electric motors and standard compass 65 feet

Distance between dynamo or electric motors and steering compass 62 feet

The nearest cables to the compasses are as follows:—

A cable carrying	<u>4.5</u> Amperes	<u>14</u>	feet from standard compass	<u>8</u>	feet from steering compass
A cable carrying	<u>3</u> Amperes	<u>4</u>	feet from standard compass	<u>4</u>	feet from steering compass
A cable carrying	<u>1</u> Amperes	<u>3</u>	feet from standard compass	<u>3</u>	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 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. ppmilar John

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Builder's Signature. Date 23rd Oct. 1918.

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

W. H. Hunt
Surveyor to Lloyd's Register of Shipping.

Committee's Minute



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. R. 18.—Transfer.