

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 15623.

Port of SUNDERLAND Date of First Survey 2nd April Date of Last Survey 24th April 1919 No. of Visits 4
 No. in 100 on the Iron or Steel "CRESTMANSEK" Port belonging to London
 Reg. Book Built at Sunderland By whom Messrs Wm Brown & Co When built 1918/19
 Owners The Admiralty Owners' Address
 Yard No. 100 Electric Light Installation fitted by Messrs J. H. Holmes & Co When fitted 1918/19

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-4 1/2 x 4" Open Vertical Single Cylinder Rotary Engine coupled direct to 1-1/2 HP Open Dynamo by J. H. Holmes & Co.
 Capacity of Dynamo 135 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
 Position of Main Switch Board Near Dynamo having switches to groups A B C D E F of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each 1-6 way 5 amp DP Switch fixed in Whulhouse, 1-6 way 5 amp DP Switch fixed at top of Stairway, 1-6 way 5 amp DP Switch fixed in Officers Accommodation, 1-3 way 5 amp DP Switch fixed at top of Stairway, 1-4 way 5 amp DP Switch fixed in Engine Room
 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 100 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 42 arranged in the following groups:—
 A 10 lights each of 16 candle power requiring a total current of 12.5 Amperes
 B 14 lights each of 16 candle power requiring a total current of 15.7 Amperes
 C 16 lights each of 16 candle power requiring a total current of 10.7 Amperes
 D 22 lights each of 16 candle power requiring a total current of 13.8 Amperes
 E Spot light lights each of candle power requiring a total current of Amperes
 F 3 Mast head light with 1 lamps each of 32 candle power requiring a total current of 3.36 Amperes
12 Side light with 1 lamps each of 32 candle power requiring a total current of 2.24 Amperes
2 Cargo lights of 6 x 32 candle power, whether incandescent or arc lights Incandescent
 If arc lights, what protection is provided against fire, sparks, &c. 57

Where are the switches controlling the masthead and side lights placed In Whulhouse

DESCRIPTION OF CABLES.

Main cable carrying 52 Amperes, comprised of 19 wires, each 16 S.W.G. diameter, .06 square inches total sectional area
 Branch cables carrying 12.5 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .012 square inches total sectional area
 Branch cables carrying 15.7 Amperes, comprised of 4 wires, each 17 S.W.G. diameter, .017 square inches total sectional area
 Leads to lamps carrying .56 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 6.7 Amperes, comprised of 4 wires, each 2 1/2 S.W.G. diameter, .006 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All conductors are formed of 1/2 lb Copper Strand insulated with pure Para Rubber & Vulcanized India Rubber Taped & Braided over all
 Joints in cables, how made, insulated, and protected None, Reaping in System carried out
 Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances None 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 Main cables are run in Iron Pipes in Deck, Road covered & clipped to Head Stowage, & the Engine Room Armoured & Braided & clipped to Stowage & Deck

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 V.I.C. in Iron Pipe

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat V.I.C. in Iron Pipe or Brass or Steel

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

How are cables carried through beams Bushed with Steel through bulkheads, &c. W.I. Stuffing Glands

How are cables carried through decks in Lead or Iron Tubes flanged & made watertight

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

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 none

Cargo light cables, whether portable or permanently fixed Portable How fixed W.I. Plug Connections

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 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

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.

COMPASSES.

Distance between dynamo or electric motors and standard compass Approx 48 ft

Distance between dynamo or electric motors and steering compass 44 ft

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>0.6</u>	<u>Inside</u>	<u>Inside</u>	
<u>6.8</u>	<u>Approx 7</u>	<u>Approx 5</u>	
<u>12.9</u>	<u>12</u>	<u>4</u>	

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 nil course in the case of the standard compass and nil degrees on nil course in the case of the steering compass.

For
SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

Builder's Signature. Date 16th May 1919.

GENERAL REMARKS. This installation has been fitted under survey, the materials and workmanship are good.
On completion it was examined under full working conditions and found satisfactory

It is submitted that
this vessel is eligible for

THE RECORD. Elec. light.

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

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.