

13. 9. 23

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8965

Port of Belfast Date of First Survey July 31st Date of Last Survey Apr 5th No. of Visits 8
 No. in Reg. Book on the Iron & Steel S. S. Herwindmoor Port belonging to Liverpool
 Built at Belfast By whom Wokman Clark & Co When built 1923
 Owners Herwindmoor S.S. Coy. Ltd. Owners' Address Sunderland
 Yard No. 164 Electric Light Installation fitted by Sunderland Forge & Eng Co When fitted 1923

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2 Compound Wound Dynamos direct coupled to 2 single cylinder Enclosed Type Engines Each machine 10 KW = 20 KW Total ✓
 Capacity of Dynamo 91 Amperes at 110 Volts, whether continuous or alternating current Continuous ✓
 Where is Dynamo fixed Starboard side in Engine Room Whether single or double wire system is used Double ✓
 Position of Main Switch Board Starboard side near dynamos having switches to groups five of lights, &c., as below
 Positions of auxiliary switch boards and numbers of switches on each Engine Room 8 switches
Wheel House 13 switches
 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 173 arranged in the following groups:—
 A Sabon 59 lights each of 16 c.p. candle power requiring a total current of 23.4 Amperes
 B Engineers 49 lights each of 16 c.p. candle power requiring a total current of 15.5 Amperes
 C Machinery Space 33 lights each of 16 c.p. candle power requiring a total current of 12.6 Amperes
 D Cargo 2 lights each of 2000 c.p. candle power requiring a total current of 36.5 Amperes
 E Wireless lights each of candle power requiring a total current of 30 Amperes
2 Mast head light with 1 lamps each of 32 c.p. candle power requiring a total current of 1.2 Amperes
2 Side light with 1 lamps each of 32 c.p. candle power requiring a total current of 1.2 Amperes
30 2 Cargo lights of 16 c.p. candle power, whether incandescent or arc lights Incandescent
2000 c.p.

If arc lights, what protection is provided against fire, sparks, &c. —

Where are the switches controlling the masthead and side lights placed In Chart Room ✓

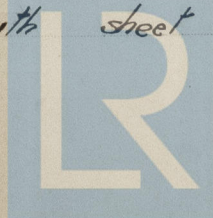
DESCRIPTION OF CABLES.

Main cable carrying 91 Amperes, comprised of 19 wires, each .083 S.W.G. diameter, .1000 square inches total sectional area ✓
 Branch cables carrying 30 Amperes, comprised of 19 wires, each .052 S.W.G. diameter, .0400 square inches total sectional area ✓
 Branch cables carrying 6.6 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .0225 square inches total sectional area ✓
 Leads to lamps carrying 1.2 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .0020 square inches total sectional area ✓
 Cargo light cables carrying 10 Amperes, comprised of 70 wires, each .0076 S.W.G. diameter, .0003 square inches total sectional area ✓

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Tinned copper conductors insulated with pure vulcanized india rubber, taped & the whole vulcanized together and finished. In accommodation: Lead covered & braided overall
In machinery spaces: Lead covered, armoured, & braided ✓
 Joints in cables, how made, insulated, and protected No joints ✓

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 None ✓How are the cables led through the ship, and how protected Lead covered, armoured, & braided cable, run on wood grounds on under side of beams, & covered with sheet iron. ✓

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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 covered
armoured & braided

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, armoured, & braided

What special protection has been provided for the cables near boiler casings Lead covered, armoured & braided

What special protection has been provided for the cables in engine room Lead covered, armoured, & braided

How are cables carried through beams Holes bushed with fibre & lead through bulkheads, &c. W.T. packing Glands

How are cables carried through decks in 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 Lead covered, armoured, & braided, covered with sheet iron

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 watertight boxes

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 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 2500 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.

F. PRO THE SUNDERS & ENGINEERING CO., LTD.

J. Thompson

Electrical Engineers

Date

-5SEP'23

COMPASSES.

Distance between dynamo or electric motors and standard compass 288 feet

Distance between dynamo or electric motors and steering compass 294 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>7</u>	<u>8</u>	<u>10</u>	<u>10</u>
<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>Amperes</u>	<u>feet from standard compass</u>	<u>feet from steering compass</u>	<u>feet from steering compass</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 no degrees on all course in the case of the standard compass and no degrees on all course in the case of the steering compass.

W. A. Humble

Builder's Signature.

Date

4-9-23

GENERAL REMARKS.

This installation is well fitted & in accordance with the Rules & passed satisfactorily a trial under full load

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

William Bates

Surveyor to Lloyd's Register of Shipping.

20KW = 14-10-0

Committee's Minute

TUE. 18SEP. 1923

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.