

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 70672

Port of Newcastle Date of First Survey 2 Nov 17 Date of Last Survey 16 Jan 18 No. of Visits 8
 No. in on the Iron or Steel S/S. Willinghamia Port belonging to Newcastle
 Reg. Book Built at Willington Quay By whom Tyr. Don Shipbuilding Co. When built 1918
 Owners The Shipping Controller Owners' Address Newcastle
 Yard No. 197 Electric Light Installation fitted by Campbell & Sherwood Ltd. When fitted 1918

DESCRIPTION OF DYNAMO, ENGINE, ETC.

C. Campbell & Sherwood 4 pole compound wound Dynamo direct coupled and a Roly Engine

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Starboard side Engine room Whether single or double wire system is used Double

Position of Main Switch Board Stores Bulkhead having switches to groups 4 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Engine room 6, Char House 8 and a
Switch in a convenient position for each light

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 75% 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 102 of 16 cp. 5 of 32 arranged in the following groups:—

A Midships lights each of 36 of 16 cp. 5 of 32 candle power requiring a total current of 25.3 Amperes

B Engineers Forward lights each of 46 of 16 cp. 1 of 32 candle power requiring a total current of 26.4 Amperes

C Engine room Boiler lights each of 20 of 16 cp. candle power requiring a total current of 11 Amperes

D Char House lights each of candle power requiring a total current of 15 Amperes

E lights each of candle power requiring a total current of Amperes

2 Mast head light with / lamps each of 32 candle power requiring a total current of Included in A Amperes

2 Side light with / lamps each of 32 candle power requiring a total current of " " Amperes

5 Cargo lights of 6 of 16 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 Char House

DESCRIPTION OF CABLES.

Main cable carrying 77.7 Amperes, comprised of 37 wires, each 16 S.W.G. diameter, .117 square inches total sectional area

Branch cables carrying 26.4 Amperes, comprised of 7 wires, each 18 S.W.G. diameter, .025 square inches total sectional area

Branch cables carrying 15 Amperes, comprised of 7 wires, each 20 S.W.G. diameter, .007 square inches total sectional area

Leads to lamps carrying 1.65 Amperes, comprised of 1 wires, each 18 S.W.G. diameter, .008 square inches total sectional area

Cargo light cables carrying 2.75 Amperes, comprised of 70 wires, each 36 S.W.G. diameter, .006 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Accommodation U. D. R. lead covered. Engine room. Armoured & Braided
Holds & exposed positions U. D. R. in screened steel tubing

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

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 Accommodation U. D. R. lead covered
Engine room Armoured & Braided. Holds: Exposed positions U. D. R. in screened
Steel tubing

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 Screwed Steel
Tubing

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

How are cables carried through beams Fibre 4 cables through bulkheads, &c. Glands ✓

How are cables carried through decks Deck Pipes 4 angled 1 Deck ✓

Are any cables run through coal bunkers — or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected Screwed Steel Tubing

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 Special W/T. Box

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 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 1000 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.

Campbell Inghenwood Ltd

Electrical Engineers

Date 4th Feb 1918

COMPASSES.

Distance between dynamo or electric motors and standard compass About 100 ft.

Distance between dynamo or electric motors and steering compass 100 "

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
55	1	1	
1.65	3	3	

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 all courses in the case of the standard compass and Nil AND ON all degrees on all courses in the case of the steering compass.

TYNE IRON SHIP-BUILDING CO. LIMITED

Builder's Signature.

Date 9th Feb 1918

GENERAL REMARKS.

The above installation has been fitted in a satisfactory manner & in accordance with the Rules

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

JWD 13/2/18

Thomas Field
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 15 FEB 1918



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