

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 35880

Port of Glasgow Date of First Survey 30/6/15 Date of Last Survey 23/3/16 No. of Visits 45
 No. in on the Steel HMS "Avenge" Port belonging to
 leg. Book Built at Glasgow By whom Fairfield Street L. When built 1916
 Owners Union L. of New Zealand Owners' Address London
 Yard No. 499 Electric Light Installation fitted by Fairfield Street L. When fitted 1916

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Four, 125 H.P. Greenwood and Batley "De Laval" steam geared Turbine driving 85 K.W. compound wound dynamos

Capacity of Dynamos 850 Amperes at 100 Volts, whether continuous or alternating current Continuous
 Where 3 in Dynamo Room 1 " N°4 Cargo Hold. Whether single or double wire system is used Double

Position of Main Switch Board Dynamo Room having switches to groups 8 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each N°4 Cargo Hold, 6 switches for Ammunition Hoists, Searchlights, Police and Navigation Lts

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 buses Yes

Total number of lights provided for 919 arranged in the following groups:— see attached list

	lights each of	candle power requiring a total current of	Amperes
1			
3			
2			
1			
2			
2	Mast head light with 1 lamp each of 16	candle power requiring a total current of 1.2	Amperes
2	Side light with 1 lamp each of 32	candle power requiring a total current of 1.8	Amperes
104	Cargo lights of 16	candle power, whether incandescent or arc lights	

Are lights, what protection is provided against fire, sparks, &c. Totally Enclosed in Lantern

Where are the switches controlling the masthead and side lights placed In Chart House.

DESCRIPTION OF CABLES.

	Amperes, comprised of	wires, each	diameter,	square inches total sectional area
Main cable carrying	850	2, 61	.118"	1.3
Branch cables carrying	250	37	.112"	.35
Branch cables carrying	100	19	.14	.094
Cables to lamps carrying	.6	1	.18	.0018
Cargo light cables carrying	.6	1	.18	.0018

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised, Taped and Braided in vicinity of Accommodations, Armoured for Storeholds, Engine Rooms etc, cables run in galvanised tubes for Magazines

Are 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 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 none

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 Cables run from Main and Emergency Boards along Main deck passages and branched to separate positions in Wood Casings.

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

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

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

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

How are cables carried through beams Fibre Bushes through bulkheads, &c. W.T. Glands

How are cables carried through decks W.T. 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 none

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 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 ~~col~~imeters 4, and with ~~am~~peremeters 4, fixed on boards

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 Yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion none

How are the lamps specially protected in places liable to the accumulation of vapour or gas none

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.

See Builder's signature below Electrical Engineers Date 15-4-16

COMPASSES.

Distance between dynamo ~~or electric motor~~ and standard compass 290 feet

Distance between dynamo ~~or electric motor~~ and steering compass 283 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	on feet from standard compass	feet from steering compass
<u>.6</u>		<u>on</u>	
A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>.6</u>		<u>on</u>	
A cable carrying	Amperes	feet from standard compass	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 none degrees on

standard compass and none degrees on course in the case of the steering compass

FOR THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO., LIMITED.

Builder's Signature. Date

GENERAL REMARKS.

This installation has been fitted on board under special survey & tested under full working conditions & found satisfactory

It is submitted that this vessel is eligible for

THE RECORD. Elec. light.

W. Gordon Maclellan

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

Committee's Minute GLASGOW 18 APR. 1916

Electric Light

LR-FAB-108-29

