

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 1206

Port of Newcastle N.S.W. Date of First Survey 15-12-19 Date of Last Survey 10-2-20 No. of Visits 14  
 No. in on the Iron or Steel Cargo Steamer SS "Dinoga" Port belonging to Newcastle N.S.W.  
 Reg. Book Built at Govt Dockyard Newcastle N.S.W. By whom N.S.W. Government When built 1920  
 Owners Commonwealth Steamship Coy. Owners' Address Melbourne  
 Yard No. 39 Electric Light Installation fitted by Messrs Sutherland & Ashman When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine 6 1/2" Dia. x 6" stroke, 360 R.P.M. Vertical Open type. 100 lbs working pressure  
 Dynamo 4 pole type Single bearing compound wound  
 Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine Room Whether single or double wire system is used Double  
 Position of Main Switch Board Aft engine room bulkhead having switches to groups 7 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Navigation Circuit 9 Switches in Chart 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 No

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 No

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 158 arranged in the following groups:—

A	Wireless	lights each of	—	candle power requiring a total current of	10.0	Amperes
B	Crews Quarters	14 lights each of	20 Watt	candle power requiring a total current of	2.8	Amperes
C	Eng. Room, Stokehold Tunnel	lights each of	16	candle power requiring a total current of	15.36	Amperes
D	Officers Quarters	3 fans & 39 lights each of	20 Watt	candle power requiring a total current of	11.0	Amperes
E	Cargo	62 lights each of	16	candle power requiring a total current of	29.76	Amperes
F	Navigation	12 lights each of 8 of 32 Watt & 4 of 20 Watt		" " " " " "	3.36	
	2 Mast head light with	2 lamps each of	32 Watt	candle power requiring a total current of	1.28	Amperes
	2 Side light with	2 lamps each of	32 Watt	candle power requiring a total current of	1.28	Amperes
	60 Cargo lights of	16	candle power, whether incandescent or are lights	Incandescent		

If arc lights, what protection is provided against fire, sparks, &c. No Arc Lights

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

## DESCRIPTION OF CABLES.

Main cable carrying	72.28 Amperes, comprised of	19 wires, each	14 S.W.G. diameter, .09442 square inches total sectional area
Branch cables carrying	Amperes, comprised of	7 wires, each	20 S.W.G. diameter, .007052 square inches total sectional area
Branch cables carrying	Amperes, comprised of	wires, each	S.W.G. diameter, square inches total sectional area
Leads to lamps carrying	Amperes, comprised of	1 wires, each	18 S.W.G. diameter, .001810 square inches total sectional area
Cargo light cables carrying	Amperes, comprised of	7 wires, each	20 S.W.G. diameter, .007052 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Joints in cables, how made, insulated, and protected Porcelain connections in iron junction Boxes  
Engine Room, Holds 1 & 4

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances No Soldered Joints 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 No joints

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 Lead covered cable through Conduit



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 galvanised pipe  
where pipes in weather

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

What special protection has been provided for the cables near boiler casings Lead covered in Conduit

What special protection has been provided for the cables in engine room Lead covered in Conduit

How are cables carried through beams Lead bushes through bulkheads, &c. Lead bushes

How are cables carried through decks Deck Tubes

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

If so, how are they protected Lead covered in Conduit

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 Plugs in masts

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Double wire system

How are the returns from the lamps connected to the hull —

Are all the joints with the hull in accessible positions No joints

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes, fixed Yes

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 \_\_\_\_\_ 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.

Sutherland & Ashman Electrical Engineers Date 23<sup>rd</sup> Feb. 1920  
Per E. L. Ray.

COMPASSES.

Distance between dynamo or electric motors and standard compass

175 feet approx.

Distance between dynamo or electric motors and steering compass

165 feet approx.

The nearest cables to the compasses are as follows:—

A cable carrying	24	Amperes	15	feet from standard compass	10	feet from steering compass
A cable carrying	46	Amperes	30	feet from standard compass	20	feet from steering compass
A cable carrying	24	Amperes	45	feet from standard compass	30	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power without

The maximum deviation due to electric currents, etc., was found to be \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the standard compass and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

A. M. Bompfrey

Builder's Signature.

Date 20.2.20.

GENERAL REMARKS.

On completion of the Electric installation in the vessel a full power test for a period of four hours was made on plant and circuits and everything was found to be satisfactory and in good order throughout.

H. T. Spence

Surveyor to Lloyd's Register of Shipping.

ELEC: LIGHT. Colled 16-4-20

TUE. MAR 22 1921

Committee's Minute FRI. AUG. 13 1920

FRI. NOV. 4 1920

FRI. APR. 15 1921

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.