

5 SEP 1924

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8491.

Port of DUNDEE Date of First Survey 9-5-1924 Date of Last Survey 26-8-1924 No. of Visits 14.  
 No. in Reg. Book on the ~~Iron or Steel~~ SS "Rydal Force" Port belonging to WHITEHAVEN  
 Built at Stannergate Shipyard By whom Caledon S.E.Co When built 1924.  
 Owners T.A. Kennaugh M.I.N.A. Owners' Address Oriel Chambers Water St. Liverpool.  
 Yard No. 291 Electric Light Installation fitted by Caledon S. & Eng. Co When fitted August.

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Single Cylinder  $5\frac{1}{2}$ " x 4" Open Type H.S. Vertical Engine 550 R.P.M. Coupled to a  
 6 K.W. Semi-Enclosed Compound Wound Dynamo. 550 R.P.M. ✓  
 Capacity of Dynamo 60 ✓ Amperes at 110 ✓ Volts, whether continuous or alternating current Continuous ✓  
 Where is Dynamo fixed After end of Engine Room Whether single or double wire system is used Double Wire ✓  
 Position of Main Switch Board After end of Engine Room Having switches to groups Four of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each No auxiliary switch boards

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-oxidisable metal Yes and constructed to fuse at an excess of 20% 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 84 arranged in the following groups:—

A	11	lights each of	40 watt	candle power requiring a total current of	4	Amperes
B	37	lights each of	5 @ 100w. 32 @ 40w.	candle power requiring a total current of	16	Amperes
C	20	lights each of	40w.	candle power requiring a total current of	8	Amperes
D	16	lights each of	40w.	candle power requiring a total current of	6	Amperes
E	—	lights each of	—	candle power requiring a total current of	—	Amperes
2	Mast head light with 1	lamps each of	100w.	candle power requiring a total current of	2	Amperes
2	Side light with 1	lamps each of	100w.	candle power requiring a total current of	2	Amperes
3	Cargo lights of	18 C.F. 16 C.P.	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 Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying 34 Amperes, comprised of 19 wires, each .064 S.W.G. diameter, .0600 square inches total sectional area ✓  
 Branch cables carrying 16 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .0225 square inches total sectional area ✓  
 Branch cables carrying 4 Amperes, comprised of 3 wires, each .036 S.W.G. diameter, .0030 square inches total sectional area ✓  
 Leads to lamps carrying 1 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, .0020 square inches total sectional area ✓  
 Cargo light cables carrying 3 Amperes, comprised of 3 wires, each .036 S.W.G. diameter, .0030 square inches total sectional area ✓

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

In Engine Room, Stokehold, Holds & Forecastle Lead Covered Armoured and Braided Cable with vulcanized rubber insulation.

In Accomodation Lead Covered Cable + vulcanized rubber insulation.

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 No.

How are the cables led through the ship, and how protected Protected with Galvanized Pipe On Deck

Cables Led through Beams protected by Lead Bushes.



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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 Galvanized Tubing

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

What special protection has been provided for the cables near boiler casings no Cables near Boiler Casings

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

How are cables carried through beams Lead Bushes ✓ through bulkheads, &c. Watertight Glands ✓

How are cables carried through decks Galvanized Deck Pipes ✓

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

If so, how are they protected Heavy Galvanized 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 Permanent How fixed Galvanized Clips

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 in Engine Room

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 CALEDON SHIPBUILDING & ENGINEERING CO LTD**  
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.

W. H. Gillanders Electrical Engineer. Electrical Engineers Date 2/9/24.

COMPASSES.

Distance between dynamo or electric motors and standard compass Approximately 150 Ft.

Distance between dynamo or electric motors and steering compass 25 Ft.

The nearest cables to the compasses are as follows:—

A cable carrying <u>5</u> Amperes <u>1</u> feet from standard compass _____ feet from steering compass
A cable carrying <u>no lights to second compass</u> Amperes _____ feet from standard compass _____ feet from steering compass
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 CALEDON SHIPBUILDING & ENGINEERING CO LTD**  
The maximum deviation due to electric currents, etc. was found to be nil degrees on any course in the case of the standard compass and nil degrees on any course in the case of the steering compass.

Grant Barclay Builder's Signature. Date 2/9/24.

GENERAL REMARKS. This installation has been fitted on board in accordance with the Rules and in an efficient manner; the materials and workmanship are sound and good. It has been tried under working conditions and found satisfactory in all respects.

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

Fee £ 6-0-0.

J. W. D. 5/9/24. J. Selles.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Im. 5. 14. — Transfer.



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