

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 109H7.

Port of Middlesbrough Date of First Survey and Date of Last Survey while building No. of Visits 1  
 No. in Reg. Book 81334 on the Iron Steel As "Rigi" Port belonging to Christiania  
 Owners Damilo Titzen & Co. Built at Middlesbrough By whom Hurness Shipbuilding Co When built 1921  
 Yard No. 3 Electric Light Installation fitted by Hurness Shipbuilding Co Owners' Address Christiania When fitted 1921

**DESCRIPTION OF DYNAMO, ENGINE, ETC.**

Dynamo, open type soap-sound wound, by Sunderland Forge Coy.  
 Engine, open, single cylinder type, by Sunderland Forge Coy.  
 Capacity of Dynamo 85 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Main engine room Whether single or double wire system is used double  
 Position of Main Switch Board Main engine room having switches to groups A, B, C, D + E of lights, &c., as below

Positions of auxiliary <sup>fuse</sup> switch boards and numbers of switches on each "A" Chart House, 8 switches, "B" Saloon pantry 10 switches, "C" Crew space aft, 6 switches, "D" Engine room, 8 switches, "E" Engine room entrance, 6 switches.

If fuses are fitted on main switch board to the cables of main circuit Yes and on each auxiliary <sup>fuse</sup> 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 Cartridge fuses used

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

Total number of lights provided for 138 arranged in the following groups :-

A Navigation	{ 5 lights each of 32 cp } { 4 lights each of 36 cp }	candle power requiring a total current of	8.5	Amperes
B Midship	{ 30 lights each of 30 watts (M.F.) } { 25 lights each of 16 cp }	candle power requiring a total current of	22.5	Amperes
C Aft	28 lights each of 16 cp	candle power requiring a total current of	16.8	Amperes
D Engine room	{ 16 lights each of 16 cp } { 2 lights each of 400 cp }	candle power requiring a total current of	13.6	Amperes
E Salusters	{ 25 lights each of 16 cp } { 2 lights each of 32 cp }	candle power requiring a total current of	15	Amperes
2 Mast head light with	1 lamps each of 32	candle power requiring a total current of	included in "A"	Amperes
2 Side light with	1 lamps each of 32	candle power requiring a total current of	" " "	Amperes
5 Cargo lights of	80	candle power, whether incandescent or arc lights	incandescent (included in E.)	

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

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

**DESCRIPTION OF CABLES.**

Main cable carrying	85 Amperes, comprised of	19 wires, each	14 S.W.G. diameter,	.1 square inches total sectional area
Branch cables carrying	22.5 Amperes, comprised of	19 wires, each	.052 S.W.G. diameter,	.04 square inches total sectional area
Branch cables carrying	13.6 Amperes, comprised of	4 wires, each	.064 S.W.G. diameter,	.0225 square inches total sectional area
Leads to lamps carrying	3 Amperes, comprised of	3 wires, each	.029 S.W.G. diameter,	.002 square inches total sectional area
Cargo light cables carrying	3 Amperes, comprised of	110 wires, each	.0076 S.W.G. diameter,	.0028 square inches total sectional area

**DESCRIPTION OF INSULATION, PROTECTION, ETC.**

In cabins etc, lead covered cables, clipped with brass clips + screws  
 In engine + boiler rooms, tween decks, crew spaces, etc, twin V.I.R. armoured + braided cables used, clipped with galvanized iron clips + screws.  
 Joints in cables, how made, insulated, and protected porcelain extensions, protected by cast iron covers where liable to damage.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances solder not used, joints being mechanical 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.

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 through beams in tween decks, protected by being armoured + braided.



DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Yes, except when tween decks are stowed full of cargo.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *lead covering or arming + braiding.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *arming + braiding.*

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

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

How are cables carried through beams *lead bushes for lead covered cables through bulkheads, &c. Watertight glands v*

How are cables carried through decks *iron deck tubes with glands top + bottom of same v*

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, tween decks*

If so, how are they protected *by being armoured + braided.*

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 */*

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 *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 *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.

FURNESS SHIPBUILDING CO. LIMITED

P. S. Glover

Electrical Engineer

Date 4<sup>th</sup> FEB 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass *approximately 150 ft.*

Distance between dynamo or electric motors and steering compass *do do*

The nearest cables to the compasses are as follows:—

A cable carrying	8.5 Amperes	12 feet from standard compass	10 feet from steering compass
A cable carrying	.3 Amperes	inside feet from standard compass	6 feet from steering compass
A cable carrying	.3 Amperes	6 ft. feet from standard compass	on the pedestal 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 *nil* degrees on *all* course in the case of the standard compass and *nil* degrees on *all* course in the case of the steering compass.

FURNESS SHIPBUILDING CO. LIMITED

Wm Christie

Builder's Signature.

Date

4<sup>th</sup> February 1921

GENERAL REMARKS.

Secretary.

This installation has been efficiently fitted and proved satisfactory under working conditions

It is submitted that

this vessel is eligible for THE RECORD. Elec. light. JW 18/2/21.

W. Cowie

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE FEB 22 1921



© 2021

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

2in. 11.10—Transfer.