

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. **40679**

Port of Glasgow Date of First Survey 22.9.20 Date of Last Survey 8/12/20 No. of Visits 3
 No. in Reg. Book 8/326 on the Iron or Steel SS Rawanpark Port belonging to Grunoek
 Built at Grangemouth By whom Messrs The Grangemouth Dock When built 1920
 Owners Messrs The Denholm Line Owners' Address _____
 Yard No. 403 Electric Light Installation fitted by W. C. Martin & Co. When fitted 1920

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 8 Kw. compound wound dynamo direct coupled to an open type vertical single cylinder double acting steam engine
 Capacity of Dynamo 73 Amperes at 110 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed starting platform in Engine Room Whether single or double wire system is used double
 Position of Main Switch Board near dynamo having switches to groups A, B, C, D & E of lights, &c., as below
 Positions of auxiliary fuse boards and numbers of fuses on each Chart Room 6 way, Saloon 6 way, Steering gear house 1-2 way & 2-4 ways, Crew space 4 way, Engine Room 4 way.

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary fuse 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 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 yes
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 107 arranged in the following groups:—
 A Saloon & Navigation lights each of 32, 16, 8, & 6 candle power requiring a total current of 18 Amperes
 B Midships & Aft 24 lights each of 16 & 8 candle power requiring a total current of 14.3 Amperes
 C Clusters 24 lights each of 16 candle power requiring a total current of 12.0 Amperes
 D Engine Room 19 lights each of 16 candle power requiring a total current of 9.5 Amperes
 E Wireless Telegraphy lights each of — candle power requiring a total current of 4.5 Amperes
2 Mast head light with 2 lamps each of 32 candle power requiring a total current of 1 Amperes
2 Side light with 2 lamps each of 32 candle power requiring a total current of 1 Amperes
4 Cargo lights of 96 candle power, whether incandescent or arc 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 in Chart Room.

DESCRIPTION OF CABLES.

Main cable carrying 73 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area
 Branch cables carrying 18 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Branch cables carrying 14.3 Amperes, comprised of 4 wires, each 16 S.W.G. diameter, .022 square inches total sectional area
 Leads to lamps carrying 2.5 Amperes, comprised of 1 wires, each 16 S.W.G. diameter, .0032 square inches total sectional area
 Cargo light cables carrying 3.36 Amperes, comprised of 108 wires, each 38 S.W.G. diameter, .0048 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

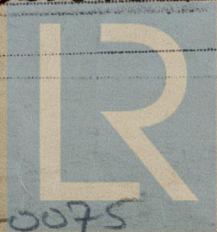
H.C. Copper wire tinned, insulated with pure & vulcanised rubber & tape, the whole vulcanized together, taped, braided & compounded or sheathed with lead or steel armour

Joints in cables, how made, insulated, and protected no joints except on terminals

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 Lead covered in accommodation and steel armour in Holds, Engine Room & Boiler Room.



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *yes, except when cargo in Holds*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Lead Covering*

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

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

What special protection has been provided for the cables in engine room *Steel Armour or metal tubes*

How are cables carried through beams *bushed where unarmoured through bulkheads, &c. W. Y. Glands*

How are cables carried through decks *metal tubes fitted watertight to decks*

Are any cables run through coal bunkers *No* or cargo spaces *yes* or spaces which may be used for carrying cargo, stores, or baggage *yes*

If so, how are they protected *steel armour cables clipped openly protected by beams*

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 *York Connectors*

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 on *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.

W. C. Martin & Co. Electrical Engineers Date *4th Dec 1920*

COMPASSES.

Distance between dynamo or electric motors and standard compass *60 ft from Dynamo*

Distance between dynamo or electric motors and steering compass *56 ft from Dynamo*

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>.28</i>	<i>6</i>	<i>1</i>	<i>—</i>
<i>.28</i>	<i>1</i>	<i>6</i>	<i>—</i>
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>

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 *a certain* course in the case of the standard compass and *Nil* degrees on *the same* course in the case of the steering compass.

FOR THE GRANGEMOUTH DOCKYARD CO., LTD.

Aspen Hill

Builder's Signature. Date

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions + found satisfactory in every way.

It is submitted that this vessel is eligible for THE RECORD. Elec Light Bell 28/12/20

J. S. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec Light



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

HZ 18.12.20

15.11.16—Transfer.