

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 32433.

Port of **GLASGOW** Date of First Survey **12-11-12** Date of Last Survey **13-8-13** No. of Visits **20**  
 No. in Reg. Book on the Iron or Steel **1/2 "Canberra"** Port belonging to **Guelowine**  
 Built at **Alse Stephens & Sons** By whom **Glasgow** When built **1913**  
 Owners **Howard Smith & Co. Ltd.** Owners' Address **Guelowine**  
 Yard No. **452** Electric Light Installation fitted by **The Sunderland Forge & Eng. Co. Ltd.** When fitted **1913**

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

**3 combined Plants consisting of compound open type steam engines with cylinders 11 1/2" and 17" dia. by 10" stroke direct coupled to multipolar generators having an output of 60 KW. @ 100v. 250 RPM**  
 Capacity of Dynamos **600** Amperes at **100** Volts, whether continuous or alternating current **Continuous**  
 Where is Dynamo fixed **In Engine Room** Whether single or double wire system is used **Double-wire**  
 Position of Main Switch Board **In Engine Room** having switches to groups **11** of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each  
**1. Navigation Switchboard in Wheelhouse. 12 Switches.**

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits **Yes**

Are the cut outs of non-oxidizable metal **Yes** and constructed to fuse at an excess of **100** per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases **Yes**

Total number of lights provided for **1238** arranged in the following groups:—

A	256	lights each of	16	candle power requiring a total current of	153.6	Amperes
B	228	lights each of	"	candle power requiring a total current of	136.8	Amperes
C	295	lights each of	"	candle power requiring a total current of	177.0	Amperes
D	194	lights each of	"	candle power requiring a total current of	116.4	Amperes
E	265	lights each of	"	candle power requiring a total current of	159.0	Amperes
2	Mast head light with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
2	Side light with	1 lamps each of	32	candle power requiring a total current of	2.4	Amperes
32-16% incand.	Cargo lights of	16%		candle power, whether incandescent or arc lights	Both fitted.	

If arc lights, what protection is provided against fire, sparks, &c. **Strong Glass Lanterns, and inner globe.**

Where are the switches controlling the masthead and side lights placed **in Wheelhouse on Navigating Bridge.**

## DESCRIPTION OF CABLES.

Main cable carrying **600** Amperes, comprised of **127** wires, each **.101** L.S.G. diameter, **1.00** square inches total sectional area  
 Branch cables carrying **100** Amperes, comprised of **19** wires, each **.14** L.S.G. diameter, **.095** square inches total sectional area  
 Branch cables carrying **50** Amperes, comprised of **7** wires, each **.14** L.S.G. diameter, **.035** square inches total sectional area  
 Leads to lamps carrying **3** Amperes, comprised of **1** wires, each **.16** L.S.G. diameter, **.0038** square inches total sectional area  
 Cargo light cables carrying **10** Amperes, comprised of **7** wires, each **.22** L.S.G. diameter, **.0042** square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

**All cables insulated with pure & vulc. india rubber, taped & vulc. & cables in accomm. lead covered over insulation.**

" " **paloms is Vulc. India rubber insulated protected by wood casing.**

" " **Mach & space - all exposed situations lead covered armoured with galv. iron wire.**

Joints in cables, how made, insulated, and protected

**No joints used.**

Are all the joints of cables thoroughly soldered, resin only having been used as a flux **—** 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 cables and wires securely clipped with strong brass clips fastened with screws.**



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 iron wire armouring where exposed to weather in addition to lead covering.

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

Lead covering & armouring.

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

Lead covering and armouring

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

How are cables carried through beams

Through holes bushed with fibre

through bulkheads, &c.

Water tight glands fitted

How are cables carried through decks

Through substantial deck tubes made watertight

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 Covering and Armouring

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage

Yes.

If so, how are the lamp fittings and cable terminals specially protected

Halshells. Strong cast iron guards and glass covers.

Where are the main switches and cut outs for these lights fitted

In Engine Room

If in the spaces, how are they specially protected

Are any switches or cut outs 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

The installation is (Yes) supplied with 3 voltmeters and

3

amperemeters fixed

On Main Switch Board in Engine Room

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, cut outs, 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 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 megohms per statute mile after 24 hours' immersion in seawater.

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.

P. PRO THE SUNDERLAND FORCE & ENGINEERING CO. LTD.

Electrical Engineers

Date 12th March 1913.

COMPASSES.

Distance between dynamo or electric motors and standard compass

56 feet

Distance between dynamo or electric motors and steering compass

50 feet

The nearest cables to the compasses are as follows:—

A cable carrying 6 Amperes 8 feet from standard compass

8 feet from steering compass

A cable carrying 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 maximum deviation due to electric currents, etc., was found to be 1 degree on

course in the case of the

standard compass and ALEX. STEPHEN & SONS, LIMITED. 1 degree on course in the case of the steering compass.

W. M. D. Moore

Builder's Signature.

Date 20th March 1913.

GENERAL REMARKS.

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

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

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

Committee's Minute

GLASGOW

25 MAR. 1913

Elec. Light



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.