

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41449

Port of Glasgow Date of First Survey 29th Aug Date of Last Survey 10th Oct 1921 No. of Visits 8  
 No. in Reg. Book 14078 on the Iron or Steel S.S. "DORICSTAR" Port belonging to London  
 Built at Grunoek By whom Messrs Lithgow Ltd. When built 1921  
 Owners Blue Star Line (1920) Ltd Owners' Address \_\_\_\_\_  
 Yard No. 731 Electric Light Installation fitted by Messrs Dundley Ross & Co When fitted 1921

TOTAL K.W. ON VESSEL = 195

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 90 K.W. compound wound and one 15 K.W. compound wound dynamo coupled direct to enclosed type engines by Messrs W.H. Allen Sons & Co. Ltd., Bedford, speeds 300 and 550 revs. respect.

Capacity of Dynamo 2 @ 110 + 1 @ 68 Amperes at 220 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 Engine Room having switches to groups seven of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each None

## Circuit Breakers

If yes 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-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 yes

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

Total number of lights provided for 240 arranged in the following groups:—

A	64	lights each of	16 & 100	candle power requiring a total current of	10	Amperes
B	34	lights each of	16	candle power requiring a total current of	4	Amperes
C	34	lights each of	16	candle power requiring a total current of	4	Amperes
D	34	lights each of	16	candle power requiring a total current of	4	Amperes
E	34	lights each of	16	candle power requiring a total current of	4	Amperes
2	Mast head lights with	1	lamps each of	32	candle power requiring a total current of	one
2	Side lights with	1	lamps each of	32	candle power requiring a total current of	one
6	Cargo lights of	sixteen	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	410	Amperes, comprised of	91	wires, each	.103	S.W.G. diameter,	.75	square inches total sectional area
Branch cables carrying	7	Amperes, comprised of	7	wires, each	.036	S.W.G. diameter,	.007	square inches total sectional area
Branch cables carrying	28	Amperes, comprised of	7	wires, each	.052	S.W.G. diameter,	.0145	square inches total sectional area
Leads to lamps carrying	1	Amperes, comprised of	1	wires, each	.004	S.W.G. diameter,	.0015	square inches total sectional area
Cargo light cables carrying	1.7	Amperes, comprised of	1	wires, each	.004	S.W.G. diameter,	.0015	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

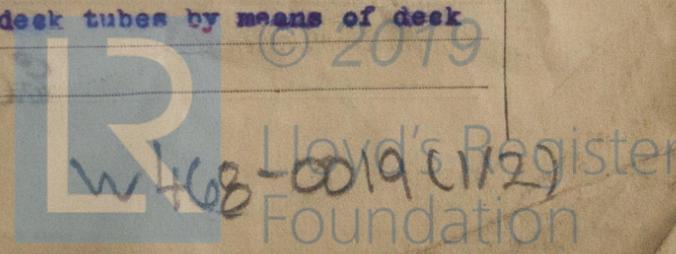
Lead covered cables in accommodation etc. and lead covered s.w.g. and braided cables in engine room etc.

Joints in cables, how made, insulated, and protected NONE

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 Under decks and through deck tubes by means of deck tubes.



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  
**Lead Covered and armoured.**

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

What special protection has been provided for the cables near boiler casings **Carried through Gas Barrel tubing.**

What special protection has been provided for the cables in engine room **Lead covered & armoured.**

How are cables carried through beams **Bushed holes** through bulkheads, &c. **Glands**

How are cables carried through decks **Deck tubes sealed at top.**

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 **Lead covered and armoured.**

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 **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.

**Grindley, Ross & Co. Ltd.** Electrical Engineers Date **18th Oct. 1921**

COMPASSES.

Distance between dynamo or electric motors and standard compass **24 feet**

Distance between dynamo or electric motors and steering compass **24 feet**

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
5	10	12	
7	32	28	
7	10	12	

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 **any** course in the case of the standard compass and **nil** degrees on **any** course in the case of the steering compass.

LITHGOWS LIMITED.

Builder's Signature. Date **20th Oct 1921**

GENERAL REMARKS.

*This installation has been fitted on board under special survey  
tested under full working conditions & found satisfactory*

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

FEE - £36-5-0  
EXP. 10-0-0  
a/c 13-10-21. 29/10/21. J.P. Rankin  
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute **GLASGOW 25 OCT 1921**  
*Elec. Light.*

*DORIC STAR*

	NO. OFF	HP.	SIZE OF CABLE	AREA OF CABLE	SPEED
FORCED DRAUGHT FANS.	2	55	37/.093	.25	
BRINE PUMP MOTORS.	3	16	19/.064	.06	
CIRCULATING PUMP MOTORS.	2	21	19/.072	.075	
WORKSHOP MOTOR.	1	5	7/.036	.007	
STEERING GEAR MOTORS.	2	30	19/.072	.075	
BICE PUMP MOTOR.	1	# 8	7/.052	.0145	
AIR CIRCULATING FANS.	4	3	7/.036	.007	

REMAIN

PARTICULARS OF SWITCHBOARD CIRCUITS.

CIRCUIT NO.	FEEDING	LOAD IN AMPERES	SIZE OF CABLE	AREA OF CABLE
I	Forced Draught Fan	208	37/.093	.25
II	Do.	208	37/.093	.25
III	Engine Rm. Power D.B.	214	37/.093	.25
IV	Refrigerating Rm D.B.	127	37/.072	.15
V	Projector	60	19/.052	.04
VI	Air Circulating Fan D.B.	50	19/.052	.04
VII	Steering Gear Motor	36	19/.072	.075
VIII	Do.	36	19/.072	.075
IX	Wireless	7	7/.036	.007
X	Engine Room	7	7/.036	.007
XI	Saloon Accommodation	7	7/.036	.007
XII	Navigation.	5	7/.036	.007
XIII	Side Houses	7	7/.036	.007
XIV	Feep	5	7/.036	.007
XV	Forecastle	7	7/.036	.007
XVI	Refrig. Engine Rm. Lighting.	7	7/.036	.007
XVII	Heating in Feep.	36	7/.052	.0145

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