

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17838

Port of Grunwick Date of First Survey 27.4.21 Date of Last Survey 14.6.21 No. of Visits 8
 No. in on the Iron or Steel S.S. CLAN MACIVER Port belonging to Glasgow
 Reg. Book 12493 Built at PT. Glasgow By whom Lithgows, Limited When built 1921
 Owners The Clan Line Steamers Co. Owners' Address Glasgow
 Yard No. 737 Electric Light Installation fitted by The Superintendent Fryer & E. J. C. Ltd When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Vertical double acting engine coupled to multi-pole compound wound dynamo
10 KW.

Capacity of Dynamo 100 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Just Platform Main Engine Room Whether single or double wire system is used Double

Position of Main Switch Board Middle Seaform Main Engine Room having switches to groups 6 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each In chart room with 16 switches controlling
Masthead, Mainmast, Port, Starboard Stern lights, compasses & telegraphs & main lamp.

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

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 No 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 19 1/2 / 216 1/2 arranged in the following groups:—

A Engine Room & aft	14 1/2 lights each of	16	candle power requiring a total current of	29.7	Amperes
B Saloon & forward	2 lights each of	16	candle power requiring a total current of	25.2	Amperes
C Hangar	16 lights each of	16	candle power requiring a total current of	9.6	Amperes
D Engine Room	27 lights each of	16	candle power requiring a total current of	16.2	Amperes
E Wireless	lights each of	—	candle power requiring a total current of	30.0	Amperes
F Masthead	2 Mast head lights with 1 lamp each of	32	candle power requiring a total current of	1.2	Amperes
	2 Side lights with 1 lamp each of	32	candle power requiring a total current of	1.2	Amperes
	5 Cargo lights of 6 - 16 1/2	90	candle power, whether incandescent or arc lights	Incandescent	

If arc lights, what protection is provided against fire, sparks, &c. None fitted

Where are the switches controlling the masthead and side lights placed In chart room with indicator

DESCRIPTION OF CABLES.

Main cable carrying 100 Amperes, comprised of 19 wires, each 15 S.W.G. diameter, .0750 square inches total sectional area

Branch cables carrying 29.7 Amperes, comprised of 19 wires, each 18 S.W.G. diameter, .0338 square inches total sectional area

Branch cables carrying 25.2 Amperes, comprised of 7 wires, each 16 S.W.G. diameter, .0221 square inches total sectional area

Leads to lamps carrying 8 Amperes, comprised of 3 wires, each 22 S.W.G. diameter, .0018 square inches total sectional area

Cargo light cables carrying 3.6 Amperes, comprised of 7 wires, each 2 1/2 S.W.G. diameter, .0049 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Accommodation:— Telerope rubber tapes & braided canvas in wood casing
 Engine Room:— " " " " " " Steel tubes

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

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 bunks, 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 Canned in steel 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 *cannet in Steel tubes or wood casing as required*

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

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

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

How are cables carried through beams *Also packed with Fibre* through bulkheads, &c. *continuous steel tubes*

How are cables carried through decks *W/T Deck tubes*

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 *cannet in Steel tubes*

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 *trans Suez*

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 _____ 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.

p.pro THE SUNDERLAND FORGE & ENGINEERING CO. LTD
M. J. ... Electrical Engineers Date 4th July 1921.
 Secretary.

COMPASSES.

Distance between dynamo or electric motors and standard compass *124 feet*

Distance between dynamo or electric motors and steering compass *128 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	<i>.6</i>	Amperes	<i>7</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>9.6</i>	Amperes	<i>7</i>	feet from standard compass	<i>6</i>	feet from steering compass
A cable carrying	<i>7.5</i>	Amperes	<i>10</i>	feet from standard compass	<i>10</i>	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.

W. J. ... Builder's Signature. Date *18 July 1921*
 Director & Secretary

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 fit for service.
The Engineer, C. Lee Light Bell 28/7/21
P.E.E. P.10.0.0. Rendered 22/7/21
J. P. Rankin, M. Lane
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW, 26 JUL 1921*

2m.1110—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



Elec. Light.