

*Strips lighting now 220v - from main switchboard - conductors 220/110 removed
 Addition of 66kW Diesel gens. fitted to run in parallel with the three existing 66kW generators - additional Re: drawn
 Refig. machinery fitted. SEE LIVERPOOL RPT 110717 dated 4/38*

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 5838

Port of Gothenburg Date of First Survey June 5 Date of Last Survey Sept. 3 No. of Visits 16
 No. in Reg. Book 66823 on the Iron or Steel "City of San Francisco" Port belonging to Panama
 Built at Gothenburg By whom A/B Götzverken When built 1924
 Owners Pacific Mail Steamship Company Owners' Address New York
 Yard No. M/S 376 Electric Light Installation fitted by Luth & Roséns Elektriska A/Bol. When fitted 1924.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Converter from 220 volts continuous current to 110 volt continuous current. *This motor generator is driven from the main dynos, 3 in number, each of 66 KW 220 volt and 300 amp.*

Capacity of Dynamo 182 Amperes at 110 Volts, whether continuous or alternating current continuous
 Where is Dynamo fixed in the engine-room Whether single or double wire system is used double wire.

Position of Main Switch Board in the engine-room having switches to groups 11 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each one I of 8 gr. in the engine-room, one II of 4 gr. in fore castle, one III of 6 gr. on main-deck midships, one IV of 6 gr. on main-deck aft, one V of 4 gr. on shelterdeck, starboard, one VI of 12 gr. on shelterdeck, port, one VII of 14 gr. on bridge-deck, one VIII of 8 gr. on boot-deck, on IX of 6 gr. on main-deck, for light on deck, on X of 6 gr. in the chart-room, one XI in wireless office for emergency lighting.

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 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 393 arranged in the following groups :-

<u>A</u>	<u>I</u>	<u>42</u>	lights each of	<u>16-100</u>	candle power requiring a total current of	<u>10</u>	Amperes
	<u>II</u>	<u>19</u>		<u>16-25</u>		<u>2</u>	
<u>B</u>	<u>III</u>	<u>30</u>	lights each of	<u>16-25</u>	candle power requiring a total current of	<u>10</u>	Amperes
	<u>IV</u>	<u>29</u>		<u>16-25</u>		<u>2</u>	
<u>C</u>	<u>V</u>	<u>19</u>	lights each of	<u>16-25</u>	candle power requiring a total current of	<u>10</u>	Amperes
	<u>VI</u>	<u>75</u>		<u>16-25</u>		<u>17</u>	
<u>D</u>	<u>VII</u>	<u>69</u>	lights each of	<u>16-25</u>	candle power requiring a total current of	<u>17</u>	Amperes
	<u>VIII</u>	<u>32</u>		<u>16-25</u>		<u>8</u>	
<u>E</u>	<u>IX</u>	<u>47</u>	lights each of	<u>16-1000</u>	candle power requiring a total current of	<u>23</u>	Amperes
	<u>X</u>	<u>12</u>		<u>16-32</u>		<u>2</u>	
	<u>XI</u>	<u>19</u>	Mast head light with 2 lamps each of	<u>32 16-25</u>	candle power requiring a total current of	<u>2</u>	Amperes
		<u>2</u>	Side light with 2 lamps each of	<u>32</u>	candle power requiring a total current of	<u>2</u>	Amperes
		<u>6</u>	Cargo lights of	<u>125</u>	candle power, whether incandescent or arc lights	<u>in</u>	<u>candescents</u>
		<u>4</u>	" " "	<u>1000</u>	" " " " " " " " " "	<u>"</u>	<u>"</u>

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

Where are the switches controlling the masthead and side lights placed in the chart-room

DESCRIPTION OF CABLES.

Main cable carrying 114 Amperes, comprised of 37 wires, each 2.03 mm S.W.G. diameter, 120 mm² square inches total sectional area
 Branch cables carrying 18 Amperes, comprised of 7 wires, each 1.71 " S.W.G. diameter, 16 " square inches total sectional area
 Branch cables carrying 10 Amperes, comprised of 7 wires, each 1.05 " S.W.G. diameter, 6 " square inches total sectional area
 Leads to lamps carrying 2 Amperes, comprised of 7 wires, each 0.52 " S.W.G. diameter, 1.5 " square inches total sectional area
 Cargo light cables carrying 2 Amperes, comprised of 7 wires, each 0.52 " S.W.G. diameter, 1.5 " square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

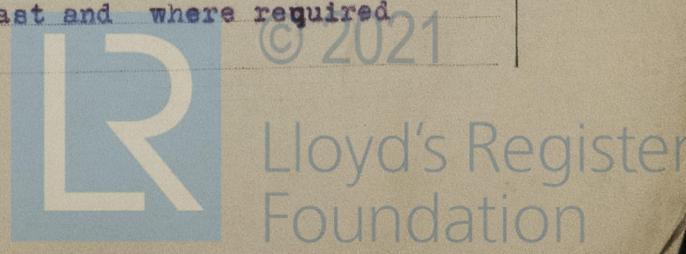
Cables are insulated with vulcanized rubber, lead armour covered with rubber tape. Where necessary rubber tape and steel armour is used.

Joints in cables, how made, insulated, and protected by porcelain boxes and, where required, by watertight metal boxes.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances yes 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 yes

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 by steel clips, screwed fast and where required protected by iron pipes.



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 protected by lead and steel armour,

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead and steel armoured,

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

What special protection has been provided for the cables in engine room lead and steel armoured

How are cables carried through beams armouring as above through bulkheads, &c. by watertight boxes

How are cables carried through decks through ironpipes

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 armoured and ironpipes where required

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 1000 megohms per kilometer 15° Celsius or 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. 2000

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.

LUTH & ROSENB ELEKTRISKA AKTIEBOLAG

Electrical Engineers

Date 21/8 1924

COMPASSES.

Herman Duse
Bror Christenson

Distance between dynamo or electric motors and standard compass Engine-room to flying bridge

Distance between dynamo or electric motors and steering compass Engine-room to flying bridge

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	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 - -

The maximum deviation due to electric currents, etc., was found to be - - degrees on - - course in the case of the standard compass and - - degrees on - - course in the case of the steering compass.

Ernst S. Hedén

Builder's Signature. Date - -

GENERAL REMARKS.

This electric installation has been fitted onboard under our inspection and has been tested and found satisfactory. All the Rule requirements have been complied with.

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

J. H. Paulow, Esq. Surveyor
Surveyor to Lloyd's Register of Shipping.

Fee No. 662.48 Applied for 6th Sept. 1924.

FRI, 19 SEP 1924

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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