

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 610

Port of Barcelona Date of First Survey Date of Last Survey No. of Visits
 No. in on the Iron or Steel S.S. "San Carlos" Port belonging to Barcelona
 Reg. Book Built at Malagorda, Cadiz, Spain By whom Sociedad Espanola de Construccion Naval When built 1917
 Owners Compania Trasatlantica Owners' Address
 Yard No. 44 Electric Light Installation fitted by Builders When fitted 1917

DESCRIPTION OF DYNAMO, ENGINE, ETC.

De Laval Steam
 Two sets of generating plant are fitted Electric turbines R.P.M. = 18'000 BHP = 55,
 Steam press. 180 geared to compound-multipolar dynamo running at 1500 R.P.M.
 (Makers, Greenwood & Battey, Leeds)

Capacity of Dynamo 320 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Special platform in Engine R^m Whether single or double wire system is used double wire

Position of Main Switch Board close to dynamo in E^e R^m having switches to groups 11 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each Two Auxiliary Switch Boards, fixed in entrance to 1st Cl. Cabins - with ten switches on each. Also Auxiliary Switch Board in room where emergency set is fitted, for changing over police lights & wireless from main dynamo to aux^y dynamo.

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-oxidisable metal usual alloy of tin & lead constructed to fuse at an excess of 30% 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, porcelain.

Total number of lights provided for 469 arranged in the following groups:—

A	<u>97</u>	lights each of <u>16</u> (metal filament) candle power requiring a total current of <u>25</u> Amperes
B	<u>88</u>	lights each of <u>16</u> " " candle power requiring a total current of <u>22</u> Amperes
C	<u>111</u>	lights each of <u>16</u> " " candle power requiring a total current of <u>26</u> Amperes
D	<u>109</u>	lights each of <u>16</u> " " candle power requiring a total current of <u>28</u> Amperes
E	<u>52 (Engine R^m)</u>	lights each of <u>32</u> " " candle power requiring a total current of <u>26</u> Amperes
<u>2</u>	Mast head light with <u>2</u> lamps each of <u>32</u> (carbon) candle power requiring a total current of <u>2.3</u> Amperes	
<u>3</u>	Side light with <u>1</u> lamps each of <u>32</u> " candle power requiring a total current of <u>3.4</u> Amperes	
<u>12</u>	Cargo lights of <u>200 - (1/2 Watt)</u> candle power, whether incandescent or arc lights <u>incandescent</u>	

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

Where are the switches controlling the masthead and side lights placed on bridge, on forward bulkhead of chart house.

DESCRIPTION OF CABLES.

Main cable carrying 300 Amperes, comprised of 2 sets of 37 wires, each (No 12) .104 S.W.G. diameter, .600 square inches total sectional area
 Branch cables carrying 42 Amperes, comprised of 7 wires, each (No 16) .064 S.W.G. diameter, .0229 square inches total sectional area
 Branch cables carrying 24 Amperes, comprised of 7 wires, each (No 18) .048 S.W.G. diameter, .0128 square inches total sectional area
 Leads to lamps carrying 3 Amperes, comprised of 1 wires, each (No 18) .048 S.W.G. diameter, .0018 square inches total sectional area
 Cargo light cables carrying 3 Amperes, comprised of 1 wires, each (No 16) .064 S.W.G. diameter, .0032 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanized rubber & tape insulation.
All wiring is cased either in galvanized iron tubes or in wood casing.

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 Feeders are covered with lead, vulcanized rubber, and armoured.

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 in some places armoured cable used, in others ordinary vuld rubber covered wire in

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat galvanized iron tubes covered with asbestos cloth

What special protection has been provided for the cables near boiler casings enclosed in galv iron tubes, kept as far away from boilers as possible

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

How are cables carried through beams fitted with fibre ferrules through bulkheads, &c. no wires passing thro' W.T.B's

How are cables carried through decks with galvanized iron tubes, with W.T. flange on deck

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 but only those cables supplying lights fitted in these spaces fitted in galvanized iron tubes, supplied with double fuses & switches

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 Water tight guarded oyster bulkhead fittings

Where are the main switches and fuses for these lights fitted on main deck, near to entrance to each space

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 permanent to main deck How fixed in galvanized iron tubes

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 1 to each dynamo and with an amperemeter 1 to each dynamo, fixed main switch board

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.

Imig 5-796
SOCIEDAD ESPAÑOLA DE CONSTRUCCIÓN NAVAL

Electrical Engineers

Date 13 OCT 1917

COMPASSES.

Distance between dynamo or electric motors and standard compass 50'-0"

Distance between dynamo or electric motors and steering compass 50'-0"

The nearest cables to the compasses are as follows:—

A cable carrying (Port) 3 Amperes 8'-0" feet from standard compass 6'-0" feet from steering compass

A cable carrying (Star) 3 Amperes 8'-0" feet from standard compass 6'-0" feet from steering compass

A cable carrying 0.5 Amperes 1'-0" feet from standard compass 1'-0" 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 ✓ course in the case of the standard compass and nil degrees on ✓ course in the case of the steering compass.

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Builder's Signature.

Date

13 OCT 1917

GENERAL REMARKS. The auxiliary dynamo is situated in separate compartment on boat deck, about 20'-0" above L.W.L. — Consisting of 6 H.P. Petrol engine, running at 900 R.P.M. Dynamo 110 volts. 43.6 Amps, and supplies current for police lights all over ship, also for the 1/2 K.W. Standard Wireless Installation, when main dynamos are out of action. This installation has been fitted on board under special survey, tested under full working conditions, & found satisfactory and eligible in our opinion to have notation of ELEC. LIGHT. It is submitted that this vessel is eligible for THE RECORD. Elec. light. Norman Kirkley Surveyor to Lloyd's Register of Shipping. 23/10/17

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.