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## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 18801

Port of New York Date of First Survey 22 May Date of Last Survey June 10<sup>th</sup> 1920 No. of Visits Six  
 No. in SS Suboatco on the Iron or Steel Submarine Boat Corp. Port belonging to Newark N.J.  
 Reg. Book Newark N.J. Built at Newark N.J. By whom Submarine Boat Corp. When built 1920  
 Owners Submarine Boat Corporation Owners' Address Newark N.J.  
 Yard No. 120 Electric Light Installation fitted by Submarine Boat Corporation When fitted 1920

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Generators, each direct driven by a vertical reciprocating engine (450 RPM)  
Each unit capable of handling the load. Generators built by General Electric Co. Engine by Gray  
 Capacity of Dynamo 90 Amperes at 110 Volts, whether continuous or alternating current Continuous  
 Where is Dynamo fixed Engine room (Starboard side) Whether single or double wire system is used Double  
 Position of Main Switch Board adjacent to dynamo having switches to groups A B C D E of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Galley & switches) officers kitchen (6 switches)

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 25 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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes  
 Total number of lights provided for arranged in the following groups:—

A	37	lights each of	25	candle power requiring a total current of	8 1/2	Amperes
B	29	lights each of	40	candle power requiring a total current of	10 1/2	Amperes
C	40	lights each of	40	candle power requiring a total current of	14 1/2	Amperes
D	39	lights each of	25	candle power requiring a total current of	9	Amperes
E	1 search	lights each of	4000	candle power requiring a total current of	35	Amperes
	2 Mast head light with 1	lamps each of	40	candle power requiring a total current of	1/3	Amperes
	2 Side light with 1	lamps each of	40	candle power requiring a total current of	2/3	Amperes
	12 Cargo lights of 4 lamps each	25 Watts	candle power, whether incandescent or arc lights	incandescent		

If arc lights, what protection is provided against fire, sparks, &c. no arc lights used

Where are the switches controlling the masthead and side lights placed in wheel house

## DESCRIPTION OF CABLES.

Main cable carrying	75	Amperes, comprised of	1	wires, each #	2	BY 3 diameter, .052 square inches total sectional area
Branch cables carrying	30	Amperes, comprised of	1	wires, each #	6	BY 3 diameter, .020 square inches total sectional area
Branch cables carrying	20	Amperes, comprised of	1	wires, each #	8	BY 3 diameter, .013 square inches total sectional area
Leads to lamps carrying	1/2	Amperes, comprised of	1	wires, each #	10	BY 3 diameter, .008 square inches total sectional area
Cargo light cables carrying	10	Amperes, comprised of		wires, each #	14	BY 3 diameter, .003 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

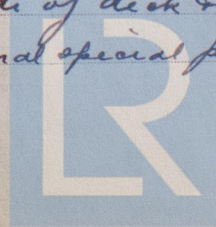
B x L Flexible steel cables throughout, metal mouldings in officers quarters & wheel house

Joints in cables, how made, insulated, and protected no joints except at terminal 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 none

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 cables led along under side of deck & securely clamped to same. These cables being armoured require no additional special protection



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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 *terminal boxes only*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *none*

What special protection has been provided for the cables near boiler casings *cable carried against grating supports (casings) clear of boiler*

What special protection has been provided for the cables in engine room *none*

How are cables carried through beams *to prevent chafing through cleamce holes & secured through bulkheads, &c. none except shaft alley*

How are cables carried through decks *through threaded bushings & lock nuts both side stuffing glands on top side*

Are any cables run through coal bunkers *no* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *Bridge*

If so, how are they protected *By being clamped against deck above between beams*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *none except bridge enclosure*

If so, how are the lamp fittings and cable terminals specially protected *waterlight attachment plug acceptacle*

Where are the main switches and fuses for these lights fitted *main switch board*

If in the spaces, how are they specially protected *waterlight boxes*

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 *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~~ *A.I.E.E.* 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.

*Insulation in accordance with requirements of the National Board of Underwriters*  
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.

Electrical Engineers Date *—*

COMPASSES.

Distance between dynamo or electric motors and standard compass *about 140 ft*

Distance between dynamo or electric motors and steering compass *about 135 ft*

The nearest cables to the compasses are as follows:—

A cable carrying *35* Amperes *10* feet from standard compass feet from steering compass

A cable carrying *7/16* Amperes *in binnacle* 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.

SUBMARINE BOAT CORPORATION

BY *Geo. A. Anthony* Builder's Signature. Date

SUPERINTENDING ENGINEER

GENERAL REMARKS.

*The insulation has been fitted in the S S Subatco under special survey. Generators erected on rigid seatings, the wires are stranded, the fittings of the wires throughout are as stated on above report & appear to be in accordance with the Committee's requirements.*

*this vessel is eligible for THE RECORD. Elec. St. Rell 19/8/20*

*L. Howorthy*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

New York JUL 27 1920



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