

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 19832

Port of *New York* Date of First Survey *15 Nov/20* Date of Last Survey *4 Jan/21* No. of Visits *4*  
 No. in Reg. Book on the ~~Iron~~ or Steel *s/s SUWORDENCO* Port belonging to *Newark N. J.*  
 Built at *Newark N. J.* By whom *Submarine Boat Corp.* When built *1920*  
 Owners *Submarine Boat Corp.* Owners' Address *Newark N. J.*  
 Yard No. *142* Electric Light Installation fitted by *Submarine Boat Corp.* When fitted *1920*

**DESCRIPTION OF DYNAMO, ENGINE, ETC.** *Two generators each direct driven by a vertical reciprocating engine (450 R.P.M.) Each unit capable of handling the load. Generators built by General Electric Co. Engines by Roy Engine & Machine Co.*  
 Capacity of Dynamos each *90* Amperes at *110* Volts, whether continuous or alternating current *continuous*  
 Where is Dynamo fixed *Starboard side of engine room* Whether single or double wire system is used *double*  
 Position of Main Switch Board *adjacent to dynamos* 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 8 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 *yes*

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	8½	Amperes
B	29	lights each of	40	candle power requiring a total current of	10½	Amperes
C	40	lights each of	40	candle power requiring a total current of	14½	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	⅓	Amperes
	2 Side light with 1	lamps each of	40	candle power requiring a total current of	⅔	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* *B+S* S.W.G. diameter, *.052* square inches total sectional area  
 Branch cables carrying *30* Amperes, comprised of *1* wires, each # *6* S.W.G. diameter, *.020* square inches total sectional area  
 Branch cables carrying *20* Amperes, comprised of *1* wires, each # *8* S.W.G. diameter, *.013* square inches total sectional area  
 Leads to lamps carrying *½* Amperes, comprised of *1* wires, each # *10* S.W.G. diameter, *.008* square inches total sectional area  
 Cargo light cables carrying *10* Amperes, comprised of *1* wires, each # *14* S.W.G. diameter, *.003* square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

*B+S* 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 protection.*





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 *cables carried against grating supports clear of boiler casings*

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

How are cables carried through beams *Through clearance holes & securely fastened to prevent chafing through bulkheads, &c. none except shaft alley*

How are cables carried through decks *Through threaded bushings with lock nuts on both sides, stuffing box & gland 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 enclosure*

If so, how are they protected *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 *watertight attachments, plug receptacles*

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

If in the spaces, how are they specially protected *watertight 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 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 ☒

*A.I.E.E.*

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.

*Insulation in accordance with 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.

*Geo. A. Anthony*

Electrical Engineers

Date *Nov. 18<sup>th</sup> 1920*

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	Amperes	feet from standard compass	feet from steering compass
<i>35</i>	<i>10</i>		
<i>1/16</i>	<i>in binnacle</i>		

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*  
SUPERINTENDING ENGINEER

Builder's Signature. Date *Nov. 18<sup>th</sup> 1920*

GENERAL REMARKS. *This installation has been fitted in the s/s "Suwordance" under special survey. The generators are 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.*

*It is submitted that this vessel is eligible for THE RECORD. Elected Bell & Co.*

*John Carnegie*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

New York FEB -1 1921



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