

# REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 16423

Port of New York Date of First Survey Oct 17/18 Date of Last Survey March 27/19 No. of Visits 4  
 No. in on the Iron or Steel S.S. "INGOLD" Port belonging to Newark N.J.  
 Reg. Book Built at Newark Bay Shipyard By whom Submarine Boat Corporation When built 1919  
 Owners U.S. Shipping Board Emergency Fleet Corp. Owners' Address Broad & Cherry Sts. Philadelphia Pa.  
 Card No. 4 Electric Light Installation fitted by Submarine Boat Corporation When fitted 1919

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Generators, each direct-driven by a vertical Steam Engine, 450 r.p.m. (each capable of handling load) Generators built by General Electric Co. Engines by Troy Engine & Machine Co.  
 Capacity of <sup>each</sup> 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 (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-oxidisable 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 none  
 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 watt	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
1	Mast head light with 2 lamps each of 40 watt	candle power requiring a total current of 1/3	Amperes
2	Side light with 2 lamps each of 40 watt	candle power requiring a total current of 2/3	Amperes
12	Cargo lights of 4 lamps, each 25 watt	candle power, whether incandescent or arc lights	incandescent

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

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

## DESCRIPTION OF CABLES.

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

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

BXL + Flex-Steel cables throughout - Metal molding 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 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 Cable led along underside of deck & securely clamped to same. These cables being armoured, require no special 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 platform 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 clamped to prevent chafing. through bulkheads, &c. none

How are cables carried through decks Through threaded bushings lock nut both sides & stuffing 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 Enclosure in 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 in bridge enclosure cages around lamps in bridge enclosure.

If so, how are the lamp fittings and cable terminals specially protected Watertight attachment plug receptacles in cargo holds.

Where are the main switches and fuses for these lights fitted 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 strapped to girders

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 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 A. I. E. E. 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 Requirements of 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.

J. C. Dever Electrical Engineers Date April 24-1919.

COMPASSES.

Distance between dynamo or electric motors and standard compass about 140 feet

Distance between dynamo or electric motors and steering compass about 135 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>35</u>	<u>10</u>	<u>—</u>	<u>—</u>
A cable carrying <u>176</u>	<u>in binacle</u>	<u>—</u>	<u>—</u>
A cable carrying <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

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 Builder's Signature. Date April 24, 1919  
Geo. A. Anthony Sup. Engr.

GENERAL REMARKS. The installation has been fitted aboard the S.S. "INGOLD" under special Survey. The generators are erected on rigid structures. The fitting of the wires throughout is as stated in above report, & appears to be in accordance with the Committee's Requirements.

It is submitted that this vessel is eligible for

THE RECORD. ELEC. LIGHT. Roll. 24-5-19.  
J. C. Dever Surveyor to Lloyd's Register of Shipping.  
Committee's Minute Elec. Lt. New York 1919  
MAY 7

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.