

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 17516

Port of New York Date of First Survey 25 Sept Date of Last Survey 2-10-19 No. of Visits 5
No. in on the ~~Iron or Steel~~ Steel "BELLEMINA" Port belonging to Kearny. N. J.
Reg. Book Built at Kearny. N. J. By whom Federal S. B. Co. When built 1919-10
Owners U. S. Shipping Board Owners' Address Philadelphia Pa.
Yard No. 30 Electric Light Installation fitted by Federal S. B. Co. When fitted 1919-10

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two Direct-connected Generators Gen. Electric Co. N.P. 6 Pole type. 425 R.P.M. compound wound
15 H.P. Vert. sin. cyl. Engines (8" x 6") 125 lbs. Steam pressure.

Capacity of Dynamo 135 Amperes at 115 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed St. Lower Engine-room Whether single or double wire system is used Double

Position of Main Switch Board Near Generators 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 1-4 Cir. Panel Aft. quarters under Poop dk.

1-6 Cir. panel for Midship deck hse. located in passage. 1-6 Cir. panel in Ford Dk. Hse.

1-8 Cir. panel in Engine-room

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 Not used.

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes.

Total number of lights provided for 196 arranged in the following groups:—

A Panel 38 lights each of 50 Watts. candle power requiring a total current of 19 Amperes

B " 54 lights each of " " candle power requiring a total current of 27 Amperes

C " 48 lights each of " " candle power requiring a total current of 24 Amperes

D " 20 lights each of " " candle power requiring a total current of 10 Amperes

E Feeder Ford. 36 lights each of " " candle power requiring a total current of 18 Amperes

One Mast head light with 2 lamps each of 32 candle power requiring a total current of ONLY ONE LAMP CAN OPERATE AT SAME INSTANT. Amperes

Two Side light with 2 lamps each of 32 candle power requiring a total current of each 1 Amperes

Nine Cargo lights of 4-50 Watt lamps each candle power, whether incandescent or arc lights Incandescent.

If arc lights, what protection is provided against fire, sparks, &c. Not used.

Where are the switches controlling the masthead and side lights placed Pilot house (Auto control.)

DESCRIPTION OF CABLES.

Main cable carrying 90 Amperes, comprised of 2 wires, each No. 0 S.W.G. diameter, 105500 CM square inches total sectional area
Branch cables carrying 40 Amperes, comprised of 2 wires, each " 4 Radio S.W.G. diameter, 41740 square inches total sectional area
Branch cables carrying 30 Amperes, comprised of 2 wires, each " 6 SEARCH LIGHT S.W.G. diameter, 26250 square inches total sectional area
Branch cables carrying 20 Amperes, comprised of 2 wires, each " 8 S.W.G. diameter, 16510 square inches total sectional area
Leads to lamps carrying 15 Amperes, comprised of 2 wires, each " 14 S.W.G. diameter, 4107 square inches total sectional area
Cargo light cables carrying 4 Amperes, comprised of 2 wires, each " 10 S.W.G. diameter, 10380 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

All conductors are National Electric Code, rubber covered, double braid.

Twin conductor cables up to 30000 CM. are used where possible.

All conductors larger than 14 A.W.G. are stranded.

Joints in cables, how made, insulated, and protected joints are soldered, using non-corrosive flux, insulated with rubber tape & protected with a wrapping of friction tape - all joints inclosed in approved fittings or junction 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 all wires with the exception of 6 Volt call bell systems are carried in approved iron conduit.

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible *Where possible to do so.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *Inclosed in rigid iron conduit made with W.T. couplings & fittings*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Iron conduit*

What special protection has been provided for the cables near boiler casings *Asbestos covered in iron conduit.*

What special protection has been provided for the cables in engine room *Iron conduit.*

How are cables carried through beams *Through holes provided & spaces* through bulkheads, &c. *N.W.T. Bulkheads Drilled Holes Same as Decks*

How are cables carried through decks *In iron conduit made W.T. with lock nuts, washers & canvas painted with red lead.*

Are any cables run through coal bunkers *Yes* or cargo spaces *Yes* or spaces which may be used for carrying cargo, stores, or baggage *Yes*

If so, how are they protected *Iron conduit clipped to inside of longitudinal channels.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *No. Portable lights used.*

If so, how are the lamp fittings and cable terminals specially protected *Navy Std. W.T. Brass plugs.*

Where are the main switches and fuses for these lights fitted *Inside of W.T. Door Shelter Deck.*

If in the spaces, how are they specially protected *Switches are extra heavy Navy Std. Brass, protected by locating in corners*

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. Two.*, fixed *on 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 *✓*

The copper used is guaranteed to have a conductivity of not less than that of the ^{AMERICAN INST. ELECTRICAL ENGINEERS} 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 *625* megohms per ^{1000 FEET.} 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.

R. W. Erickson

Electrical Engineers

Date *30-9-19*

COMPASSES.

Distance between dynamo or electric motors and standard compass *approx 110'*

Distance between dynamo or electric motors and steering compass *" "*

The nearest cables to the compasses are as follows:—

| Cable | Amperes | feet from standard compass | feet from steering compass |
|---|----------|----------------------------|----------------------------|
| A cable carrying <i>30 SEARCHLIGHT.</i> | <i>8</i> | <i>9</i> | <i>9</i> |
| A cable carrying <i>3</i> | <i>6</i> | <i>5</i> | <i>5</i> |
| A cable carrying <i>1/2</i> | <i>8</i> | <i>1.5</i> | <i>1.5</i> |

Have the compasses been adjusted with and without the electric installation at work at full power *Yes. On trial*

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.

Federal Shipbuilding Co.
Per pro R. D. Gardner Ch. Eng. Drafts.

Builder's Signature.

Date *30-9-19.*

GENERAL REMARKS.

The fitting of the wires throughout the Vessel is as stated in the Report & appears to be in accordance with the Committees requirements

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

JWD 11/11/19.

C. F. Macdonald.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Elec. Lt.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.