

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4445.

Port of PHILADELPHIA Date of First Survey MAY 25th Date of Last Survey SEP. 13th No. of Visits 18.
 No. in on the ~~book~~ Steel T.S.S. "KAMO" Port belonging to —
 Reg. Book Built at CAMPDEN By whom NEW YORK SHIPBUILDING CORP When built 1922
 Owners IMPERIAL JAPANESE NAVY Owners' Address —
 Yard No. 267 Electric Light Installation fitted by NEW YORK SHIPBUILDING CORP When fitted 1922

DESCRIPTION OF DYNAMO, ENGINE, ETC.

TWO (2) 400 K.W. 225 VOLT, D.C. GENERATOR, BUILT BY THE GENERAL ELECTRIC CO SCHENECTADY, NEW YORK
GEAR CONNECTED TO CURTIS STEAM TURBINE, BUILT BY THE GENERAL ELECTRIC CO SCHENECTADY

Capacity of Dynamo 1777 Amperes at 225 Volts, whether continuous or alternating current CONTINUOUS

Where is Dynamo fixed GENERATOR FLAT. ENGINE ROOM Whether single or double wire system is used DOUBLE

Position of Main Switch Board ENGINE ROOM having switches to groups 28 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 2-8 CIR. PANEL, 2-10 CIR. PANEL, 2-12 CIR. PANELS,
2-14 CIR. PANEL, 1-16 CIR. PANEL, FOR LIGHTS, 2-2 CIR. PANEL, 3-4 CIR. PANEL, FOR POWER.

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 10% 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 725 arranged in the following groups:—

A	<u>104</u>	lights each of <u>2-15, 1-25, 101-50</u>	<u>WATT</u> power requiring a total current of <u>23.2</u>	Amperes
B	<u>168</u>	lights each of <u>73-25, 95-50</u>	<u>WATT</u> power requiring a total current of <u>29.88</u>	Amperes
C	<u>62</u>	lights each of <u>44-50, 18-250</u>	<u>WATT</u> power requiring a total current of <u>30.45</u>	Amperes
D	<u>226</u>	lights each of <u>19-25, 207-50</u>	<u>WATT</u> power requiring a total current of <u>49.13</u>	Amperes
E	<u>45</u>	lights each of <u>36-50, 9-100</u>	<u>WATT</u> power requiring a total current of <u>12.27</u>	Amperes
<u>2</u>	Mast head light with <u>2</u> lamps each of <u>120</u>	<u>WATT</u> power requiring a total current of <u>1.09</u>	Amperes	
<u>2</u>	Side light with <u>2</u> lamps each of <u>120</u>	<u>WATT</u> power requiring a total current of <u>1.09</u>	Amperes	
<u>12</u>	Cargo lights of <u>6-50 WATT (CLUSTER)</u>	<u>WATT</u> power, whether incandescent or are lights		

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 TELL TALE PANEL IN WHEEL HOUSE

DESCRIPTION OF CABLES.

Main cable carrying <u>1777</u> Amperes, comprised of <u>508/12</u> wires, each <u>.080</u>	<u>BXS</u> diameter, <u>2.5308</u> square inches total sectional area
Branch cables carrying <u>23.2</u> Amperes, comprised of <u>19/16</u> wires, each <u>.050</u>	<u>BXS</u> diameter, <u>.0380</u> square inches total sectional area
Branch cables carrying <u>29.88</u> Amperes, comprised of <u>37/18</u> wires, each <u>.040</u>	<u>BXS</u> diameter, <u>.0481</u> square inches total sectional area
Leads to lamps carrying <u>30.45</u> Amperes, comprised of <u>37/18</u> wires, each <u>.040</u>	<u>BXS</u> diameter, <u>.0481</u> square inches total sectional area
Cargo light cables carrying <u>16.36</u> Amperes, comprised of <u>37/18</u> wires, each <u>.040</u>	<u>BXS</u> diameter, <u>.0481</u> square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

LEAD & ARMORED CABLE

Joints in cables, how made, insulated, and protected GOOD MECHANICAL JOINTS WITH APPROVED CONNECTOR BLOCKS, IN WATER-TIGHT BOXES, PAINTED WITH INSULATING COMPOUND.

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

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 LEAD & ARMORED CABLE



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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. —

LEAD & ARMORED CABLE

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat **LEAD & ARMORED CABLE**

What special protection has been provided for the cables near boiler casings **LEAD & ARMORED CABLE**

What special protection has been provided for the cables in engine room **LEAD & ARMORED CABLE**

How are cables carried through beams **LEAD BUSHINGS** through bulkheads, &c. **STUFFING TUBES**

How are cables carried through decks **IN CONDUIT**

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 **LEAD & ARMORED CABLE**

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 FIXTURES & FITTINGS**

Where are the main switches and fuses for these lights fitted **OUTSIDE OF SPACES**

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 **PORTABLE & PERMANENT** How fixed **STEEL BRACKETS**

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 amperometer **YES**, fixed **ON 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 **YES**

Are any switches, fuses, or joints of cables fitted in the pump room or companion **NO**

How are the lamps specially protected in places liable to the accumulation of vapour or gas **VAPOR PROOF FIXTURES**

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.

Arthur Parker

Electrical Engineers

Date **11-Sept-22**

COMPASSES.

Distance between dynamo or electric motors and standard compass **APPROX. 240 FT.**

Distance between dynamo or electric motors and steering compass **APPROX. 232 FT.**

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
.5	3		

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 **2** degrees on **N. W.** course in the case of the standard compass and **3** degrees on **N. W.** course in the case of the steering compass.

H. A. Ingham

Builder's Signature.

Date **11-Sept-22**

GENERAL REMARKS. THE INSTALLATION IS FITTED ON BOARD IN A SATISFACTORY MANNER. IT WAS TRIED UNDER FULL WORKING CONDITIONS WITH ALL LIGHTS ON, AND FOUND TO WORK SATISFACTORILY.

FEE \$ **282.50**

Paid 21/10/22

J. A. Buchanan

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK TUE. 20 SEP. 1922

Elect Light

Rpt. 9a.

Port of

New York

Continuation of Report No. **21684** dated

9 June 22

on the

Kamai

Excitation & Auxiliary Generators ✓

Number of **two** ✓

Volts **112.5 / 125** ✓

Description **Direct Current** ✓

Rating **500 K.W.** ✓

Revolutions **1100 per min.** ✓

Number of Poles **6** ✓

Diameter of Armature **98"** ✓

Length of Core **12"** ✓

Length & width of poles **11" x 9 1/2"** ✓

Commutator **19 1/2" dia x 16" long** ✓

Number of Segments **108** ✓

Winding **3. reverse** ✓

Auxiliary A.C. Generator

Number of **one**

Volts **450**

Description **Alternating Current**

Phase **3.**

Number of Poles **two**

Cycles **18.3 normal**

Revolutions **1100**

Rating **625 K.W.**

The above generators are driven by geared turbines (report herewith) the A.C. Auxiliary generator is arranged for coupling up to one of these sets in the event of a break down of the main generator or turbine in which event the D.C. generator will run idle and the other D.C. generator will provide excitation and auxiliary power & lighting.

It is estimated that the Auxiliary A.C. Generator will propel the vessel at a speed of 5 or 6 knots.

William Butler

SPARE GEAR.

FOR MAIN GENERATOR AND TWO PROPELLING MOTORS.

ONE SET ARMATURE COILS & INSULATION & CLIPS. ONE MAIN BEARING

FOR GENERATOR SIDE. ONE COLLECTOR. ONE SET BRUSHES & BRUSH HOLDERS

MAIN MOTORS. TWO SETS STATOR COILS. ONE SET HORIZONTAL

BEARINGS. ONE SET BRUSHES.

J. A. Buchanan



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