

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41917

W.S. 188

Port of Glasgow Date of First Survey 24. 8. 1920 Date of Last Survey 2. 5. 1922 No. of Visits 16  
 No. in Reg. Book 15061 on the Iron or Steel S.S. EMPRESS OF CANADA Port belonging to LONDON  
 Built at Hovan By whom Messrs The Fairfield S.B. & Co When built 1921  
 Owners Canadian Pacific Railway Owners' Address \_\_\_\_\_  
 Yard No. 528 Electric Light Installation fitted by Messrs The Fairfield S.B. & Co When fitted 1921

— TOTAL KW = 900 —

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

3 - W.H. ALLEN SON & CO 275 KW. OPEN TYPE SHUNT WOUND DYNAMOS GEARED TO W.H. ALLEN TURBINES.  
 1 - W.H. ALLEN SON & CO 75 K.W. " " " " " COUPLED TO A MIRRORLESS BICKERTON & DAY DIESEL OIL ENGINE  
 Capacity of Dynamos 1250 Amperes at 220 & 110 Volts, whether continuous or alternating current CONTINUOUS  
 Where ARE Dynamos fixed DYNAMO ROOM IN ENGINE ROOM Whether single or double wire system is used DOUBLE  
EMERGENCY DYNAMO ROOM BOAT DECK.  
 Position of Main Switch Board DYNAMO ROOM having switches to groups 24 of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each (SHELTER DECK BOARD "B" 117 PORT 12 CIRCUITS, BOARD "C" 152 PORT  
7 CIRCUITS, BOARD "D" 151 STB 10 CIRCUITS, BOARD "E" 85 STB 12 CIRCUITS) FORCED DRAUGHT FAN BOARD MAIN DYNAMO RM 8 CIRCUITS,  
EMERGENCY BOARD DYNAMO RM BOAT DECK 15 CIRCUITS, FORWARD CARGO WINCH BOARD CONTACTOR HOUSE BRIDGE DECK FORWARD 6 CIRCUITS, AFT  
CARGO WINCH BOARD CONTACTOR HOUSE BOAT DECK AFT 6 CIRCUITS.  
 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 50 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 No  
 Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases YES

2 Allen  
 Brw "type  
 fuses  
 fitted  
 of 27  
 E.L. 49539  
 Total 420  
 KW for 2  
 engines.

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

Group	Description	Number of Lights	Wattage	Candle Power	Current (Amperes)
A	lights each of			candle power requiring a total current of	Amperes
B	lights each of			candle power requiring a total current of	Amperes
C	lights each of			candle power requiring a total current of	Amperes
D	lights each of			candle power requiring a total current of	Amperes
E	lights each of			candle power requiring a total current of	Amperes
	2 Mast head light with	1	lamps each of 32	candle power requiring a total current of	2.03 Amperes
	2 Side light with	1	lamps each of 32	candle power requiring a total current of	2.03 Amperes
	14 Cargo lights of	5 - 32	500 WATT & 300 WATT	candle power, whether incandescent or arc lights	INCANDESCENT
	2 Propeller lights		500 WATT & 300 WATT	Totally enclosed in lanterns.	

Where are the switches controlling the masthead and side lights placed WHEELHOUSE ON NAVIGATING BRIDGE.

## DESCRIPTION OF CABLES.

Type	Amperes, comprised of	wires, each	S.W.G. diameter,	square inches total sectional area
Main cable carrying				
Branch cables carrying				
Branch cables carrying				
Leads to lamps carrying				
Cargo light cables carrying				

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

LEAD COVERED AND LEAD COVERED ARMOURD & BRAIDED.

Joints in cables, how made, insulated, and protected NONE.

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 \_\_\_\_\_

Are there any joints in or branches from the cable leading from dynamo to main switch board NONE.

How are the cables led through the ship, and how protected CABLES ARE LEAD COVERED OR LEAD COVERED, ARMOURD & BRAIDED AND CLIPPED UP.

**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 COVERED ARMOURED & BRAIDED

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat LEAD COVERED AND LEAD COVERED ARMOURED & BRAIDED

What special protection has been provided for the cables near boiler casings LEAD COVERED ARMOURED & BRAIDED.

What special protection has been provided for the cables in engine room LEAD COVERED ARMOURED & BRAIDED.

How are cables carried through beams WOOD & LEAD BUSHED through bulkheads, &c. BULKHEAD GLANDS

How are cables carried through decks DECK TUBES.

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 COVERED ARMOURED & BRAIDED.

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 SPECIAL CARGO FITTINGS WITH HINGED IRON COVERS.

Where are the main switches and fuses for these lights fitted AT TOP OF STAIRWAYS.

If in the spaces, how are they specially protected IRON SWITCHES FIXED ON BEAM.

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 voltmeters YES, and with an amperemeters YES ON MAIN AND EMERGENCY SWITCHBOARDS, (INCLUDING AMPEREMETERS FOR FORCED DRAUGHT FANS)

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for <sup>BURNING OIL FUEL</sup> ~~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 GAS TIGHT.

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.

J. Kinnes Electrical Engineer Date 22/12/21

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 43 FEET

Distance between dynamo or electric motors and steering compass 44 "

The nearest cables to the compasses are as follows:—

A cable carrying	<u>.51</u>	Amperes	<u>IN</u>	<del>feet from</del> standard compass	feet from steering compass
A cable carrying	<u>.51</u>	Amperes		<del>feet from standard compass</del>	<u>IN</u> 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 YES

The maximum deviation due to electric currents, etc., was found to be NIL degrees on ANY course in the case of the standard compass and NIL degrees on ANY course in the case of the steering compass.

**THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO., LIMITED.**

Builder's Signature. Date

**GENERAL REMARKS.**

J. Kinnes MANAGER.

This installation has been fitted on board under special survey, tested under full working conditions and found satisfactory in every way.

It is submitted that this vessel is eligible for the RECORD. Elec. Light. J. Rankin Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 16 MAY 1922

Elec. Light.



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

*Handwritten notes:*  
15/5/22  
2m.11.10—Transfer.