

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41592

Port of Glasgow Date of First Survey 25.1.21 Date of Last Survey 9.12.21 No. of Visits 14
 No. in Reg. Book 24726 on the Iron or Steel S.S. "Montcalm" Port belonging to Liverpool
 Built at Clydebank By whom Messrs J. Brown & Co. Ltd. When built 1931.
 Owners Canadian Pacific Railway Owners' Address _____
 Yard No. 464 Electric Light Installation fitted by Messrs J. Brown & Co. Ltd. When fitted 1931.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

3- 175 K.W. Dynamos driven by geared steam turbines TOTAL KW = 600.

1- 75 K.W. Dynamo driven by Diesel Oil Engine

Capacity of Dynamo 3 each 1590 Amperes at 110 Volts, whether continuous or alternating current S.S.

Where is Dynamo fixed 3 at aft end of Engine Room Whether single or double wire system is used Double

Position of Main Switch Board at aft end of Engine Room having switches to groups See Continuation Sheet of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1- "C" Deck Fore 20 Switches, 1- "C" Deck Mid 17 Switches, 1- "C" Deck Aft 17 Switches 1- Boat Deck Mid 15 Switches.

Circuit Breakers
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 100 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 2875 arranged in the following groups :-

Group	Description	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
A						
B						
C						
D						
E						
	2 Mast head light, with each lamp	2	each of 32		candle power requiring a total current of 2.2	Amperes
	2 Side light, with each lamp	2	each of 32		candle power requiring a total current of 2.2	Amperes
	14 Quaters Cargo lights of 5-32 c.h. 500 watt	14			candle power, whether incandescent or arc lights	Incandescent

If arc lights, what protection is provided against fire, sparks, &c. _____

Where are the switches controlling the masthead and side lights placed W Leel House

DESCRIPTION OF CABLES.

Main cable carrying _____ Amperes, comprised of _____ wires, each _____ S.W.G. diameter, _____ square inches total sectional area

Branch cables carrying _____ Amperes, comprised of _____ wires, each _____ S.W.G. diameter, _____ square inches total sectional area

Branch cables carrying _____ Amperes, comprised of _____ wires, each _____ S.W.G. diameter, _____ square inches total sectional area

Leads to lamps carrying _____ Amperes, comprised of _____ wires, each _____ S.W.G. diameter, _____ square inches total sectional area

Cargo light cables carrying 5.5 Amperes, comprised of 7 wires, each .044 S.W.G. diameter, .01 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Vulcanised india rubber Lead covered vulcanised india rubber Lead covered armoured by steel wires and braided, and paper insulated Lead covered

Joints in cables, how made, insulated, and protected No joints.

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 _____

How are the cables led through the ship, and how protected Clipped to steel plating or run in troughs.



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 In trawling in alley ways. In lifting in open.

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered.

What special protection has been provided for the cables near boiler casings Lead Covered Armoured and Braided

What special protection has been provided for the cables in engine room Lead Covered Armoured and Braided.

How are cables carried through beams through bulkheads, &c. Watertight Glands.

How are cables carried through decks Watertight Glands.

Are any cables run through coal bunkers 770 or cargo spaces 770 or spaces which may be used for carrying cargo, stores, or baggage Yes.

If so, how are they protected Lead Covered Armoured and Braided run on beams.

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 Totally enclosed when not in use.

Where are the main switches and fuses for these lights fitted Outside bunker.

If in the spaces, how are they specially protected ---

Are any switches or fuses fitted in bunkers ---

Cargo light cables, whether portable or permanently fixed Permanent How fixed Clipped to steelwork.

In cessels 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 Switchboards.

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 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.

John Brown & Company Limited.

J. Anderson Electrical Engineers Date 13th Dec 1921
Glydebank Secretary.

COMPASSES.

Distance between dynamo or electric motors and standard compass 21 feet.

Distance between dynamo or electric motors and steering compass 11 feet.

The nearest cables to the compasses are as follows:—

A cable carrying	1	Amperes	1	feet from standard compass	1	feet from steering compass
A cable carrying	9	Amperes	38	feet from standard compass	18	feet from steering compass
A cable carrying	20	Amperes	48	feet from standard compass	28	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 7/2 degrees on any course in the case of the standard any course in the case of the steering compass.

John Brown & Company Limited.

J. Anderson Builder's Signature. Date 13th December 1921.
Glydebank Secretary.

GENERAL REMARKS.

This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory. It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

FRS - £46-10-0 of 16-12-21. J. Rankin
paid 31.12.21. 2/1/22 Surveyor to Lloyd's Register of Shipping.

Committee's Minute Elec. Light

T.S.S. "MONTCALM."

GENERATOR NO	KW	AMPS	CABLE	
			SIZE	AREA
1	175	1590	3"x2"	1.5"
2	"	"	"	"
3	"	"	"	"
EMERGENCY GENERATOR	75	682	2-9/16"	1.2"

TOTAL KILOWATTS = 600

PARTICULARS OF MAIN SWITCHBOARD.

	HP	LOAD AMPS	CABLE		
			SIZE	AREA	
BRINE PUMP	4.75	39	7/052	.0145	✓
CO ₂ COMPRESSOR	32	246	61/093	.4	✓
TURNING MOTOR STAR ^{BD}	20	158	37/083	.2	✓
STOKEHOLD FAN ST ^{BD} FORD	32	275	61/093	.4	✓
" " " " AFT	32	275	61/093	.4	✓
WORKSHOP MOTOR	3	25	7/044	.01	✓
TL DYN + REFRIG FANS	13	107	19/083	.1	✓
H.MI. ANTI GORR + PUMPS	2	17.2	7/044	.01	✓
ENGINE ROOM FAN STAR ^{BD}	7.5	63	19/064	.06	✓
EMERGENCY SWITCHBOARD	—	590	127/103	1	✓
STOKEHOLD FAN PORT FORD	32	275	61/093	.4	✓
" " " " AFT	32	275	61/093	.4	✓
SANITARY PUMP NO 1	28	226	37/103	.3	✓
" " NO 2	28	226	37/103	.3	✓
TURNING MOTOR PORT	20	158	37/083	.2	✓
ENGINE ROOM FANS PORT	7.5	63	19/064	.06	✓
ENGINE ROOM LIFT MOTOR	5	40	7/064	.0225	✓
AIR COMPRESSOR MOTOR	9.5	75	19/064	.06	✓
RING MAIN PORT	—	950	2-127/103	2	paper?
" " STAR ^{BD}	—	950	2-127/103	2	"

PARTICULARS OF EMERGENCY SWITCHBOARD.

BOAT WINCHES AFT	—	330	61/103	.5	✓
" " FORD	—	330	61/103	.5	✓
WYLIE DAVIT STAR ^{BD} AFT	—	213	37/093	.25	✓
" " " " FORD	—	213	37/093	.25	✓
" " " " PORT AFT	—	213	37/093	.25	✓
" " " " FORD	—	213	37/093	.25	✓
LIGHTING FORD	—	94	61/093	.4	✓
" " AFT	—	100	37/083	.2	✓
AIR COMP ^{SOE} & COOLER PUMP	—	30	19/052	.04	✓
WORKSHOP M ^{RS} HUMMERS ETC.	—	81	19/064	.06	✓
BILGE PUMP	—	79	37/103	.3	✓
BOATL ^{TS} W/T DOORS ETC.	—	49	37/072	.15	✓
WIRELESS	—	30	19/064	.06	✓