

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 24 JAN 1920

Date of writing Report 19 When handed in at Local Office 19 Port of Montreal

No. in Survey held at Montreal Date, First Survey 14<sup>th</sup> Oct 1919 Last Survey 13<sup>th</sup> Dec 1919  
Reg. Book. (Number of Visits 22)

on the Twin Screw Ice Breaker "Laurel"

Tons { Gross 1220  
Net 633

Built at Montreal By whom built Canadian Vickers Ltd Hard No. 110 When built 1919-12

Owners Canadian Government Port belonging to Ottawa

Electric Light Installation fitted by Canadian Vickers Ltd Contract No. When fitted 1919

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Two Wire

Pressure of supply for Lighting 110 volts, Heating ✓ volts, Power 110 volts.

Direct or Alternating Current, Lighting Direct Current Power Direct current

If alternating current system, state frequency of periods per second ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off Yes

Generators, do they comply with the requirements regarding rating Yes, are they compound wound Yes  
are they over compounded 5 per cent. ✓, if not compound wound state distance between each generator

Where more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in series with each shunt field Yes

Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators On Dynamo Flat in Engine room

is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators ✓ and ✓, are the generators protected from mechanical injury and damage from water, steam or oil Yes

are their axes of rotation fore and aft Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact Yes

Main Switch Boards, where placed on Starboard side of Dynamo Flat

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes Yes

are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards ✓ and ✓

are they constructed wholly of durable, non-ignitable non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Yes

if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓

and is the frame effectively earthed Yes Are the fittings as per Rule regarding:— spacing or shielding of live parts Yes, accessibility of all parts Yes, absence of fuses on back of boards except meter fuses, proportion of omnibus bars ✓, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches double pole and fused

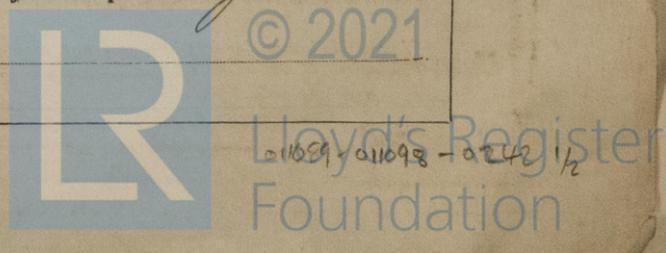
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches! double pole main switch and circuit breaker on each dynamo (Equalizer switch is fitted)

Instruments on main switchboard 2 ammeters 2 voltmeters ✓ synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Test lamps supplied

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes



**Cables:** *Single, twin, concentric, or multiple* Concentric are the cables insulated and protected as per Tables IV or V of the Rules Yes

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 5 falls

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

**Paper Insulated Cables:** If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound None used

**Cable Runs,** are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage Yes

**Support and Protection of Cables,** state how the cables are supported and protected Wires are run on beams except where on plate runways

If cables are run in wood casings, are the casings and caps secured by screws no wood, are the cap screws of brass Yes, are the cables run in separate grooves Yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Yes

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements Yes

**Joints in Cables,** state if any, and how made, insulated, and protected no joints

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes

**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed Yes state the material of which the bushes are made Lead bushings

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas all wires are grounded through the clips at one place or another. Switchboard frame etc.

are their connections made as per Rule Yes

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule Yes

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven no emergency generator  
110 Volt Emergency Battery

**Navigation Lamps,** are these separately wired Yes, controlled by separate switch and separate fuses Yes, are the fuses double pole Yes, are the switches and fuses grouped in a position accessible only to the officers on watch Yes, has each navigation lamp an automatic indicator as per Rule Yes

**Secondary Batteries,** are they constructed and fitted as per Rule Yes

**Fittings,** are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight Yes, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected Yes, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None so fitted, how are the cables led Yes, where are the controlling switches situated Yes

**Searchlight Lamps,** No. of 1, whether fixed or portable fixed, are their fittings as per Rule Yes

**Arc Lamps,** other than searchlight lamps, No. of Yes, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes

**Motors,** are their working parts readily accessible Yes, are the coils self-contained and readily removable for replacement Yes, are the brushes, brush holders, terminals and lubricating arrangements as per Rule Yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material Yes, in Refridge space, are they protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type not totally enclosed; if not of this type, state distance of the combustible material horizontally or vertically above the motors 2 feet and horizontally + Refridge

**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes

**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule Yes, on both masts

**Ships carrying Oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings Yes 11.2 fittings and switches in E.H. Rooms

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office Yes, 11.2 and 11.3 fittings approved as portable.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	13.5	110	120	500	30 B.H.P. single cylinder	✓	✓
AUXILIARY		(Detailed Thompson-Houston 6' generator)				(Armstrong & Baker Eng.)		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. per Pole.	CONDUCTORS. Total Effective Area per Pole Sq. Ins.	COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
			No.	Diameter in Mils.	In Circuit.	Rule.			
MAIN GENERATOR	1	133.100 C. 9.	19	83.7	122	150	209.50 feet	P. 6. 2. 2.	L.C. in Circuit
EQUALISER CONNECTIONS	1	133.100 C. 9.	19	83.7	Parallel	150	107.15 "	"	"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
MOTOR GENERATOR									
ENGINE ROOM	1	10.380	7	38.5	17	24	24 feet	P. 6. 2. 2.	L.C. and armoured
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMODATION	1	10.10380	7	38.5	10.4	24	80 feet	P. 6. 2. 2.	L.C. and armoured
Middle	1	6.26.250	7	61.2	33.5	46	190 "	"	"
Aft	1	10.10.380	7	38.5	10	24	40 "	"	"
Fore	1	10.10.380	7	38.5	4	24	250 "	"	"
Right	1	10.10.380	7	38.5	11.5	24	160 "	"	"
WIRELESS	1	6.26.250	7	61.2	10	46	112 "	"	"
SEARCHLIGHT	1	6.26.250	7	61.2	42	46	250 "	"	"
MASTHEAD LIGHT	1	14.4.107	7	24.2	3	12	300 "	"	"
SIDE LIGHTS	1	14.4.107	7	24.2	3	12	32 "	"	L.C.
COMPASS LIGHTS	1	14.4.107	7	24.2	1	12	16 "	"	L.C.
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS. No. Per Pole.	CONDUCTORS. Total Effective Area per Pole Sq. Ins.	COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
Refridge	1	1	10.10.380	7	38.5	8	24	60 feet	P. 6. 2. 2.	L.C. & Armoured
	1	1	14.4.107	7	24.2	4	12	20 "	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7.  
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
 The foregoing is a correct description.

Electrical Engineers. Date \_\_\_\_\_

COMPASSES.

Distance between electric generators or motors and standard compass 130 feet

Distance between electric generators or motors and steering compass 130 feet

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 4 feet from standard compass 4 feet from steering compass.

A cable carrying \_\_\_\_\_ Ampères \_\_\_\_\_ feet from standard compass \_\_\_\_\_ feet from steering compass.

A cable carrying \_\_\_\_\_ Ampères \_\_\_\_\_ feet from standard compass \_\_\_\_\_ feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power no

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be  degrees on  course in the case of the standard compass  degrees on \_\_\_\_\_ course in the case of the steering compass.



Canadian Vickers Ltd.  
Montreal Canada. Builder's Signature. Date \_\_\_\_\_  
per H. Cameron. (Naval Architect)

Is this installation a duplicate of a previous case no. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. \_\_\_\_\_)

This vessel has been fitted with an electric light installation as above and the workmanship is good.  
On completion it was tried under full working conditions and found satisfactory.

It is submitted that this vessel is eligible for THE RECORD.

Elec. Light.

J.S.H.  
27/1/30

2 - 13.5 H.W. each

Total Capacity of Generators 27 Kilowatts.

The amount of Fee ... £ 210 :  
 Travelling Expenses (if any) £  :  
 When applied for, 19... ML  
 When received, 30.7.19 30/1/30

Geo. Allan  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 31 JAN 1930

Assigned Elec. Lt.

Im. 123. - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

