

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

22 APR 1949

Received at London Office

Date of writing Report 29th December 1948 When handed in at Local Office 30th December 1948 Port of Quebec, P.Q.

No. in Survey held at Quebec, P.Q. Date, First Survey 18th Dec. '47 Last Survey 23rd December 1948
(Number of Visits 49)

Reg. Book. 56001 on the Steel Single Screw M/V "CORUCHE" Tons Gross 1122.3 Net 613.53

Built at Quebec, P.Q. By whom built St. Lawrence Metal & Marine Works Inc. Yard No. 77 When built 1948

Owners Soc. Geral de Comercio Industria e Transportes Lda. Port belonging to Lisbon

Electric Light Installation fitted by Bedard-Gerard Limited Contract No. 23254 When fitted 1948

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Three Wire 120/240 Volts

Pressure of supply for Lighting 120 volts, Heating 240 volts, Power 240 volts.

Direct or Alternating Current, Lighting D.C. Power D.C.

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 temperature rise Yes, are they compound wound Yes

are they over compounded 5 per cent. Yes, 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 Have certificates of test results for machines under 100 kw. been submitted and

approved Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing -

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 one each Port & Stbd at aft end of E.R. 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 Mid line at For'd End of E.R.

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 Ebony Asbestos 1 1/2" is all insulation of high dielectric strength and of permanently high insulation resistance Yes

is it of an approved type 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 - is the non-hygroscopic insulating material of an approved

type - 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 board As approved, temperature rise of

omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the

"off" position No are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of

switches No Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

2-4 pole 600 A.S.T. Air breakers fitted with overload & R.C. trips, setting 400A. 2-5 pole 400A disconnect knife switches (1-90A. 3-70A)

8-2 pole 200 A.S.T. knife switches fused (2-150A. 5-125A. 1-110A.) 4-2 pole 100A.S.T. knife switches fused (1-90A. 3-70A)

3-2 pole 60 A.S.T. knife switches fused (1-50A. 3-40A.) 13-2 pole 30A. knife switches fused (1-25A. 4-20A. 8-15A.) 4-3 pole 60A. knife switches

Are turbine driven generators fitted with emergency trip switch as per rule - Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material Yes Instruments on main switchboard 6 ammeters 3 volt-

meters - synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

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

one ammeter wired to permanently earthed neutral Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes have the reversed



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current protection devices been tested under working conditions 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 multicore single are the cables insulated and protected as per Tables IV, V, X or XI of the Rules Yes
 If the cables are insulated otherwise than as per Rule, are they of an approved type - **Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load** 4% **Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets** Yes **Paper Insulated and Varnished Cambric Insulated Cables.**
 If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound Yes, or waterproof insulating tape - **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 **Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit & Trays** Lead Covered

Support and Protection of Cables, state how the cables are supported and protected Cables run on perforated trays all suitably supported and clipped

If cables are run in wood casings, are the casings and caps secured by screws -, are the cap screws of brass -, are the cables run in separate grooves -. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table XI Yes

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements -

Joints in Cables, state if any, and how made, insulated, and protected Junction boxes

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

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Neutral bus permanently earthed to steel frame which is attached direct to steel floors.
are their connections made as per Rule -

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** Generator Room Boat deck, switchboard alongside Main switchboard, Generator diesel driven, hand start.

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** -

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** -

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected -, **how are the cables led** -

where are the controlling switches situated -

are all fittings suitably ventilated -, **are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials** Yes

Heating and Cooking Appliances, are they constructed and fitted as per Rule Yes, **are air heaters constructed and fitted as per Rule** Yes

Searchlight Lamps, No. of one x 12", **whether fixed or portable** fixed, **are their fittings as per Rule** Yes

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

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, **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** -, **if not of this type, state distance of the combustible material horizontally or vertically above the motors** - **and** -

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing - **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** - **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** - **are all fuses of the filled cartridge type** - **are they of an approved type** -

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office -

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule Yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	75	120/240	312	1000	Diesel Engine	Diesel Oil	Above 150°F
AUXILIARY								
EMERGENCY	1	7½	120/240	31.2	1200	Diesel Engine	Diesel Oil	Above 150°F
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit	Rule.			
MAIN GENERATOR	1	.4	61	.093	312	464	80	V.C.L.C.	Tray
EQUALISER CONNECTIONS	1	.4	61	.093	312	464	80	V.C.L.C.	Tray
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	.0130	7	.0486	31.2	55	160	V.C.L.C.	Tray
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM Dist. Panel	1	.0130	7	.0486	24.95	55	50	V.C.L.C.	Tray
Boiler Room Sub. Cirps.	1	.0050	7	.0305			1740		
AUXILIARY SWITCHBOARDS									
Power Panel No.3	1								
Power Panel No.5	1	.0050	7	.0305	12	30	150	V.C.L.C.	Tray
Power Panel No.6	1	.0080	7	.0385	8.6	42	180	V.C.L.C.	Tray
Power Panel No.7	1								
ACCOMMODATION Aft...	1	.0080	7	.0385	11.19	42	220	V.C.L.C.	Tray
D.P. No.1 For'd	1	.0080	7	.0385	12.33	42	230	V.C.L.C.	Tray
D.P. No.2 Boat deck	1	.0130	7	.0486	24	55	80	V.C.L.C.	Tray
D.P. No.3 Midship	1	.0130	7	.0486	33.25	55	50	V.C.L.C.	Tray
Nav. Light Panel	1	.0050	7	.0305	3.13	30	50	V.C.L.C.	Tray
WIRELESS	1	.0050	7	.0305	10	30	100	V.C.L.C.	Tray
SEARCHLIGHT	1	.0030	7	.0242	3.48	12.9	40	R.I.L.C.	
MASTHEAD LIGHT	1	.0030	7	.0242	.52	12.9	250	R.I.L.C.&B.A.	
SIDE LIGHTS each	1	.0030	7	.0242	.87	12.9	70	R.I.L.C.	
COMPASS LIGHTS	1	.0030	7	.0242	.13	12.9	20	R.I.L.C.	
POOR LIGHTS Sub. Cirps.	1	.0030	7	.0242		12.9	6000	R.I.L.C.	Tray
CARGO LIGHTS For'd & Aft	1	.0050	7	.0305	7.0	19.6	260	R.I.L.C.&B.A.	Tray
ARC LAMPS Batter. Charging	1	.0050	7	.0305	10	30	170	V.C.L.C.	Tray
HEATERS 3-Digit Panels	1	.0050	7	.0305	18.75	30	230	V.C.L.C.	Tray

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit	Rule.			
WATER PUMP Fire...	1	1	.0655	19	.0664	92	100	100	V.C.L.C.	Tray
MAIN BILGE LINE PUMPS	1	1	.0330	7	.0772	42	100	120	V.C.L.C.	Tray
GENERAL SERVICE PUMP	1	1	.0655	19	.0664	96	100	160	V.C.L.C.	Tray
EMERGENCY BILGE PUMP										
SANITARY PUMP	2	1	.0050	7	.0305	12.3	30	60	V.C.L.C.	Tray
CIRC. SEA WATER PUMPS	1	1	.0201	7	.0612	38	74	100	V.C.L.C.	Tray
CIRC. FRESH WATER PUMPS	1	1	.0201	7	.0612	38	74	100	V.C.L.C.	Tray
AIR COMPRESSOR	1	1	.0050	7	.0305	12.3	30	60	V.C.L.C.	Tray
FRESH WATER PUMP	2	1	.0050	7	.0305	4.3	30	40	V.C.L.C.	Tray
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	1	1	.0520	7	.0974	74	137	120	V.C.L.C.	Tray
OIL FUEL TRANSFER PUMP	2	1	.0050	7	.0305	8.3	30	140	V.C.L.C.	Tray
WINDLASS	1	1	.0520	7	.0974	74	137	300	V.C.L.C.	Tray & Conduit
WINCHES, FORWARD	4	1	.0520	7	.0974	148	137	180	V.C.L.C.	Tray & Conduit
Power Panel Dk.M.Heaters	1	1	.0050	7	.0305	4.3	30	80	V.C.L.C.	Tray & Conduit
WINCHES, AFT	2	1	.0520	7	.0970	148	137	180	V.C.L.C.	Tray & Conduit
Capstan	1	1	.0130	7	.0486	29	55	360	V.C.L.C.	Tray & Conduit
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.0080	7	.0385	12.3	40.5	360	V.C.L.C.	
WORKSHOP MOTOR...each	2	1	.0050	7	.0305	4.3	19.6	60	R.I.L.C.	Tray
VENTILATING FANS										
Lub. Oil Cent.pump&Heater	1	1	.0130	7	.0486	33	55	130	V.C.L.C.	Tray
Fuel oil transfer pump	1	1	.0050	7	.0305	1.5	30	100	V.C.L.C.	Tray

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

BEDARD-GIRARD LIMITED

170 BLVD. DES CAPELAINS
QUEBEC, P. Q.

Electrical Engineers.

Date Jan 13/49.

Fred Bille

COMPASSES.

Distance between electric generators or motors and standard compass 57'

Distance between electric generators or motors and steering compass 50'

The nearest cables to the compasses are as follows:—

A cable carrying .13 Ampères in feet from standard compass in feet from steering compass.

A cable carrying 3.48 Ampères 4 feet from standard compass 6 feet from steering compass.

A cable carrying 1.74 Ampères 4 feet from standard compass 12 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes

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, and - degrees on - course in the case of the steering compass.

Audrideman

Builder's Signature.

Date Jan 13/49

Is this installation a duplicate of a previous case Yes If so, state name of vessel M/V "CARTAGO"

General Remarks (State quality of workmanship, opinions as to class, &c. The Electrical Equipment has been fitted on board this Vessel under Special Survey and in accordance with approved Plans and the Rules for Electrical equipment, megger tested throughout, tried under full working conditions and found satisfactory. It is submitted for the favourable consideration of the Committee that the Electrical installation in conjunction with the remaining machinery is eligible in my opinion to be assigned the Record *L.M.C. 12,48.

Notes See 2/8/49

Total Capacity of Generators 157 1/2 Kilowatts.

The amount of Fee ... X 229 00 : When applied for, Jan 4 1949
Travelling Expenses (if any) X 20 00 : When received, Feb 24 1949

J. Kallert
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 10 JUN 1949

FRI. 12 AUG 1949

Assigned

Deferred See F.B. nuchy rpt



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(The Surveys are requested not to write on or below the space for Committee's Minute)