

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

4 MAY 1944

Received at London Office

Date of writing Report 23rd Feb., 44 When handed in at Local Office 23rd Feb., 44 Port of Vancouver, B. C.
 No. in Survey held at Vancouver, B. C. Date, First Survey 4th Jan., 1944 Last Survey 18th Feb., 1944
 Reg. Book. (Number of Visits 11)
 -- on the Steel Single Screw Tanker Conversion "ARLINGTON BEACH PARK" Tons { Gross 7241.52
 Net 4181.45
 Built at Vancouver, B. C. By whom built West Coast Shipbuilders, Ltd. No. 135 When built 1944
 Owners Minister of Munitions & Supply of Canada, belonging to Montreal, P.Q.
 (Mgrs.) - Park Steamship Co. Ltd., Montreal, P.Q.
 Electric Light Installation fitted by West Coast Shipbuilders, Ltd. Contract No. -- When fitted 1944
 Homogeneous Cargo of --
 Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution Constant Pressure Two-Wire Direct Current

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

Direct or Alternating Current, Lighting Direct Power Direct

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. No, 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 Attached. Also

Ship's Trial Results attached. Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Under 100 K.W.

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 Engine Room Generator Platform on first grating level Starboard Aft 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 Aft end of Generator Platform Athwartships

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 Same Compartment.

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 Ebony Asbestos, 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 Yes, 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 Yes are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of switches No

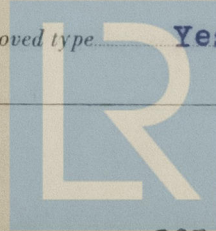
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 150 Ampere D.P. linked Circuit Breakers on separate panels with overload and reverse current trips, and a three-pole isolating switch for each generator. D.P. switches and fuses for each outgoing circuit.

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 3 ammeters 3 volt-

Selector switch on No.2 Generator Voltmeter. meters. synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

Yes Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system No.2 Generator Voltmeter Selector Switch wired to give ground readings in addition to Generator and Bus Bar readings, also earth lamps and switch. 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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Foundation

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 and Twin on High Pressure Multicore on Telephones. The cables insulated and protected as per Tables IV, V, X or XI of the Rules Approved Wartime Cables.

If the cables are insulated otherwise than as per Rule, are they of an approved type Yes Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5.0 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 --, or waterproof insulating tape Yes 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 Both

Support and Protection of Cables, state how the cables are supported and protected In accommodation spaces clipped to woodwork or steel structure as per Rule. Main cables above deck supported on substantial fore and aft platform fitted full length of ship at bridge deck level. Cables efficiently clipped on same and well protected.

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the cap screws of brass Yes, 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 VIII Yes

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

Joints in Cables, state if any, and how made, insulated, and protected None except at 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 and hardwood collars

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Lead Covered and Armoured Cables effectively earthed.

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 None

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 Wheelhouse

has each navigation lamp an automatic indicator as per Rule Yes Secondary Batteries, are they constructed and fitted as per Rule Yes (Wireless)

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 Cast Metal Guards.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Yes in Magazines and in Shaft Tunnel (Admiralty Type Magazine Fittings (A.P. 7007B)), how are the cables led Lead covered and steel armoured cables clipped as per Rule in Magazines and Shaft Tunnel. Degaussing paper insulated cables led through tween deck spaces over Cargo Tanks, where are the controlling switches situated Outside Compartments.

are all fittings suitably ventilated Yes, 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 None, are air heaters constructed and fitted as per Rule None

Searchlight Lamps, No. of 1-12" 1000 Watt Metal Filament Lamp. whether fixed or portable Spigot on either side of Flying Bridge. are their fittings as per Rule Yes

Are 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 Where possible., 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 Drip Proof. say

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 Under 100 B.H.P. 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 Telescopic Mast and A.N.D. Booms Bonded to Deck

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 are all fuses of the filled cartridge type Yes are they of an approved type Yes

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office None Fitted

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. | Ampere. | Rev. per Min. | | Fuel Used. | Flash Point of Fuel. | | |
| MAIN | 3 | 15 | 110 | 136 | 575 | Steam Reciprocating | -- | -- | | |
| AUXILIARY | | | | | | | | | | |
| EMERGENCY | | | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | | | |
| GENERATOR, LIGHTING AND HEATING CONDUCTORS. | | | | | | | | | | |
| DESCRIPTION. | No. per Pole. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED |
| | | Total Nominal Area per Pole Sq. Ins. | No. | Diameter. | Circuit. | Rule. | | | | |
| MAIN GENERATOR | 1 | .166 | 19 | .105 | 136 | 162 | 42 | Rubber | In Conduit | |
| EQUALISER CONNECTIONS | 1 | .104 | 19 | .083 | - | 118 | 21 | " | " " | |
| AUXILIARY GENERATOR | | | | | | | | | | |
| Final Distribution Circuits Mostly | 7 | .024 | | | Insulated with either rubber or synthetic resin lead covered and lead covered steel armoured. | | | | | |
| ROTARY MOTOR | | | | | | | | | | |
| TRANSFORMER GENERATOR | | | | | | | | | | |
| Blr. & Ltg. | | | | | | | | | | |
| ENGINE ROOM | D8 | .020 | 7 | .061 | 41.0 | 43 | 30 | Rubber | In Conduit | |
| Refrigerator | | .082 | 19 | .074 | 75 | 166 | 180 | Varnished Cambric | Lead Covered & Steel Armoured | |
| AUXILIARY SWITCHBOARDS | | | | | | | | | | |
| Degaussing Panel | | .131 | 19 | .094 | 65 | 138 | 36 | Rubber | Lead Covered & Steel Armoured | |
| Accommodation Bridge | D1 | .020 | 7 | .061 | 34 | 43 | 30 | P.V.C. | Lead Covered | |
| Accom. Saloon | D2 | .020 | 7 | .061 | 26.0 | 43 | 16 | P.V.C. | Lead Covered | |
| Accom. Engr. House - Port | D4 | .020 | 7 | .061 | 31 | 43 | 152 | P.V.C. | Lead Covered & Steel Armoured | |
| Accom. Engr. House - Star. | D5 | .020 | 7 | .061 | 36 | 43 | 100 | P.V.C. | " " | |
| Accommodation Crew | D7 | .082 | 19 | .074 | 46 | 166 | 352 | Varnished Cambric | " " | |
| Power Panel | P1 | .020 | 7 | .061 | 18 | 43 | 30 | Rubber | In Conduit | |
| Section Box | S1 | .082 | 19 | .074 | 80.5 | 166 | 340 | Varnished Cambric | Lead Covered & Steel Armoured | |
| Shore Connections | | .104 | 19 | .083 | 100 | 196 | 80 | Varnished Cambric | " " " | |
| Navigation | | .008 | 7 | .038 | 3 | 27 | 370 | P.V.C. | " " " | |
| WIRELESS | | .052 | 7 | .097 | 30 | 122 | 370 | Varnished Cambric | " " " | |
| SEARCHLIGHT | | .008 | 7 | .038 | 10 | 27 | 420 | P.V.C. | " " " | |
| MASTHEAD LIGHT | | .003 | 7 | .024 | .3 | 10 | 280 | P.V.C. | " " " | |
| SIDE LIGHTS | | .003 | 7 | .024 | .3 | 10 | 40 | P.V.C. | " " " | |
| COMPASS LIGHTS | | .003 | 7 | .024 | .3 | 10 | 22 | P.V.C. | Lead Covered | |
| POOP LIGHTS | | | | | | | | | | |
| Main Masthouse | D6 | .020 | 7 | .061 | 24.0 | 43 | 290 | P.V.C. | Lead Covered and Steel Armoured | |
| CARGO LIGHTS | | | | | | | | | | |
| Foremast House | DB1 | .020 | 7 | .061 | 20.5 | 43 | 260 | P.V.C. | " " " | |
| Foremast Cargo Lights | | .032 | 7 | .077 | 10 | 55 | 350 | P.V.C. | " " " | |
| CYCLE | | | | | | | | | | |
| 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. | | | |
| BALLAST PUMP | | | | | | | | | | |
| MAIN BILGE LINE PUMPS | | | | | | | | | | |
| GENERAL SERVICE PUMP | | | | | | | | | | |
| EMERGENCY BILGE PUMP | | | | | | | | | | |
| SANITARY PUMP | | | | | | | | | | |
| CIRC. SEA WATER PUMPS | | | | | | | | | | |
| FRESH WATER PUMPS | 1 | 1 | .005 | 7 | .030 | 6.5 | 16 | 36 | P.V.C. | Lead Covered & Steel Armoured |
| 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 | | | | | | | | | | |
| Eng. Room | 1 | 1 | .005 | 7 | .030 | 6.5 | 16 | 112 | P.V.C. | Lead Covered & Steel Armoured |
| VENTILATING FANS | | | | | | | | | | |

* Polyvinyl Chloride Insulated Cables had to be installed in machinery space and on deck in fore and aft raised platform, owing to the non-availability of rubber insulated cables.

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.

WEST COAST SHIPBUILDERS LTD.

W.D.M. Lane
General Manager

Electrical Engineers.

Date 23rd Feb., 1944.

COMPASSES.

Distance between electric generators or motors and standard compass

19' (Wireless Alternator)

Distance between electric generators or motors and steering compass

16' (" ")

The nearest cables to the compasses are as follows:

A cable carrying .25 Ampères 9 inches from standard compass 9 inches from steering compass. (Compass Light)

A cable carrying .3 Ampères 1'-4" feet from standard compass 1'-4" feet from steering compass. (Compass Correction Coils)

A cable carrying .3 Ampères 5 feet from standard compass 3 feet from steering compass. (Wheelhouse Light)

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 Yes

The maximum deviation due to electric currents was found to be Nil degrees on All course in the case of the standard

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

WEST COAST SHIPBUILDERS LTD.

W.D.M. Lane
General Manager

Builder's Signature.

Date 23rd Feb., 1944.

Is this installation a duplicate of a previous case Yes If so, state name of vessel E.S. "MOUNT BRUCE PARK" (Ver. Report No. 6048)

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

The electrical equipment of this ship has been installed under Special Survey in accordance with the approved plans, New York letters and Society's Rules except as noted hereafter. As rubber insulated cables are not now available in any sizes and Varnished Cambric cables are not available in sizes smaller than No. 3 B & S gauge in this country, Polyvinyl Chloride cables, contrary to Notice No. 1805 have had to be accepted as listed on deck and in machinery spaces. Polyvinyl Chloride insulated cables have been used for machinery space lighting circuits in addition to the feeders mentioned. Special attention was given to the installation of such cables and they are kept at least 1" clear of all steelwork to allow for air circulation.

The paper insulated degaussing cables are led through tween deck spaces and have only been approved in this position as a wartime emergency.

The materials and workmanship are good and the installation has been examined under full working conditions, tested as per Rule and found satisfactory, and in our opinion is eligible to have the Society's Classification without special notation subject to Polyvinyl Chloride insulated cables installed in machinery spaces and above deck being specially examined within two years before the end of February, 1946 and to degaussing cables being removed from tween deck spaces at end of war emergency. Copies of particulars of ship's trials on generators attached. Maker's certificates covering steam auxiliary engines (driving generators) and generators attached. As fitted plan of electrical wiring attached. The electrical equipment has also been surveyed during construction and installation on behalf of Wartime Shipbuilding, Ltd., to ensure that the terms of the specification have been fully complied with and this work has been satisfactorily carried out.

Total Capacity of Generators 45 Kilowatts.

The amount of Fee ... £125.00

When applied for,

23rd Feb. 44

Travelling Expenses (if any) £10.00

When received.

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Committee's Minute

THURS 11 MAY 1944

Assigned

See fe. machy r/l

Noted
Hus
6.5.44

W.G. Donald
Surveyor to Lloyd's Register of Shipping.