

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 17 JUN 1942

Date of writing Report 28th April 1942 When handed in at Local Office 28th April 1942 Port of Vancouver, B.C.

No. in Survey held at Vancouver, B.C. Date, First Survey 7th March 1942 Last Survey 2nd May 1942
Reg. Book. (Number of Visits 9)

on the Steel Single Screw Steamer "FORT FRASER" Tons { Gross 7125.74 Net 4253.28

Built at North Vancouver B.C. By whom built Burnard Drydock Coy Ltd Yard No. 136 When built 1942

Owners His Majesty's Government in the United Kingdom Port belonging to

Electric Light Installation fitted by Burnard Drydock Coy Ltd. Contract No. When fitted 1942

Is the Vessel fitted for carrying Petroleum in bulk No

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. No, is an adjustable regulating resistance fitted in series with each shunt field Yes

approved See general remarks Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Under 100kw

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

Position of Generators Centre of engine room starboard side, is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yes

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 engine room starboard side

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

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

type Yes, 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 6°F

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 Double Pole linked switch with a fuse on each pole for each generator and a O.P.O.T. linked selector switch with a fuse on each pole for each outgoing circuit

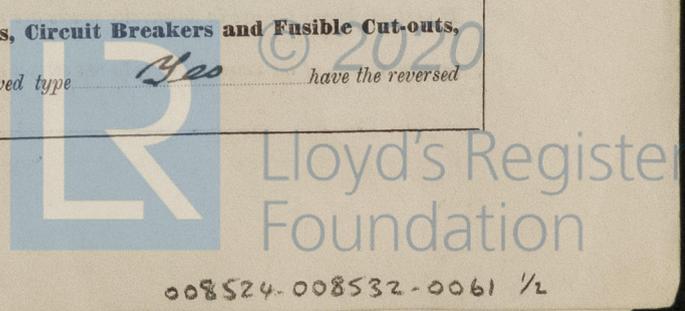
Are turbine driven generators fitted with emergency trip switch as per rule - Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material -

Instruments on main switchboard 2 ammeters 2

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

No equaliser connections fitted Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Positive and negative earth lamps and switches

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



current protection devices been tested under working conditions Not fitted **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 core 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 Yes **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 2.5 volts

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 _____ **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 Lead covered and conduit

Support and Protection of Cables, state how the cables are supported and protected Clipped to woodwork in accommodation by brass clips spaced as per rule and run in wood casings elsewhere run in conduit all cables protected by metal guards where liable to damage

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 _____

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 cables, conduit and metal trays 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 Not fitted

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 W. feedback

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 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 No

of ship's deck or quarters attached Yes, how are the cables led _____ where are the controlling switches situated _____

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 Yes are air heaters constructed and fitted as per Rule Not fitted

Searchlight Lamps, No. or None whether fixed or portable _____ are their fittings as per Rule _____

Arc Lamps, other than searchlight lamps, No. of None 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 _____ 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 BHP **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 Not fitted **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	Two	15	110	136	575	STEAM RECIPROCATING			
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER									

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.	Circuit.	Rule.			
MAIN GENERATOR	1	.2	37	.083	136	184	46	RUBBER INSUL.	LEAD COVERED
EMERGENCY CONNECTIONS	1	.2	37	.083	136	184	30	" "	" "
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	.032	7	.077	20	55	40	V.I.R.	DOUBLE BRAIDED IN CONDUIT
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Sec. Box S ₁ (D ₁ , D ₂)	1	.104	7	.137	60	118	266	" "	" "
Sec. Box S ₂ (D ₁ , D ₂ , D ₃)	1	.032	7	.077	70	75	86	" "	" "
ACCOMMODATION ENG. 0.9	1	.032	7	.077	20	55	4	" "	" "
" CASHIER 0.7	1	.032	7	.077	25	55	338	" "	" "
" SALOON 0.2	1	.032	7	.077	17	55	4	" "	" "
" CAP. & BRIDGE 0.1	1	.032	7	.077	20	55	58	RUBBER INSUL.	LEAD COVERED
WIRELESS	1	.052	7	.090	22.5	75	366	" "	O.B. IN CONDUIT & LEAD COVERED
SEARCHLIGHT NAVIGATION	1	.0081	7	.038	2.5	30	326	" "	" "
MASTHEAD LIGHT	1	.0032	7	.024	.3	10	358	" "	DOUBLE BRAIDED IN CONDUIT
SIDE LIGHTS	1	.0032	7	.024	.6	10	74	" "	LEAD COVERED
COMPASS LIGHTS	1	.0032	7	.024	.05	10	44	" "	" "
CARGO LIGHTS AFT	1	.032	7	.077	14	55	180	" "	DOUBLE BRAIDED IN CONDUIT
CARGO LIGHTS AFT	1	.032	7	.077	17	55	4	" "	" "
REFRIG. DIS.	1	.032	7	.077	22	55	136	" "	" "
REFRIG. DIS.	1	.012	7	.048	22	34	324	" "	" "

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										
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	1	1	.003	7	.024	4.5	10	20	RUBBER INSULATED	DOUBLE BRAIDED IN CONDUIT
REFRIG. MOTOR	1	1	.008	7	.038	16.0	24	20	" "	" "

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.

Burrard Dry Dock Company, Limited
C. C. Burrard Electrical Engineers.

Date 28th April 1942

COMPASSES.

Distance between electric generators or motors and standard compass 25 feet
Distance between electric generators or motors and steering compass 20 feet

The nearest cables to the compasses are as follows:—

A cable carrying .2 Ampères 1.0 feet from standard compass 1.5 feet from steering compass.
A cable carrying .35 Ampères 5 feet from standard compass 3.5 feet from steering compass.
A cable carrying 1.25 Ampères 9.5 feet from standard compass 6 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 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.

Burrard Dry Dock Company, Limited

C. C. Burrard Builder's Signature.

Date 28th April 1942

Is this installation a duplicate of a previous case Yes If so, state name of vessel SS "FORT ST JAMES"
Vancouver Report No 5718

General Remarks (State quality of workmanship, opinions as to class, etc.) 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. The materials and workmanship are good. 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. Copies of particulars of ship's trials on generators attached. Maker's certificates covering steam auxiliary engines (driving generators) and generators attached.

As fitted plans of electrical wiring attached.
The electrical equipment has also been surveyed during construction and installation on behalf of Wartime Merchant Shipping Ltd. to ensure that the terms of the specification have been fully complied with and this work has been satisfactorily carried out.

Noted
H. J. Donald
19/6/42.

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ... \$125.00 : When applied for, 28th Apr 1942
Travelling Expenses (if any) \$10.00 : When received, ✓ 19

H. J. Donald
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 23 JUN 1942

Assigned

See Rec. No. 5742



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2m.534.—Transfer.
The Signatories are requested not to write on or below the space for Committee's Minute.