

Rpt. 4d.

REPORT ON ELECTRIC PROPELLING MACHINERY.

No. 21022

Received at London Office

10 SEP 1947

Date of writing Report 25th AUGUST 1947 When handed in at Local Office G. G. 104 Port of GLASGOW.
No. in Survey held at Glasgow Date, First Survey 4.6.1947 Last Survey 12th August 1947.
Reg. Book. 25895 on Single Screw vessel "BEAVERCOVE" Number of Visits 9
Triple
Quadruple
Built at Glasgow By whom built Messrs FAIRFIELD LTD. Yard No. 728 When built 1947
Electrical Machines made at Heaton By whom made C.A. Parsons & Co. Ltd. Contract No. M. 2693
Generator No. A 2695 When made 1947.
Motor No. 2694
Shaft Horse Power at Full Power 9,000 Total capacity of Generators 7,400 kilowatts
Nom. Horse Power as per Rule 1,500 Owners Canadian Pacific Railway Co., Ltd. Port belonging to London
Trade for which Vessel is intended London - Montreal Freight.

STEAM ENGINES.—Type of Engine

No. of Engines

Revs. per minute

Is a Governor fitted

Is the speed variation as per Rule when load is thrown off

Is an emergency Governor fitted

Is it arranged for hand tripping

Does it trip the throttle valve as per Rule

If exhaust steam is admitted, is an

automatic shut-off fitted

Is provision made for bleeding steam

is a non-return or positive shut-off valve fitted

and

Torque Limiting.—If generator capacity exceeds motor rating state means provided for limiting torque input to screw shaft

Lubricating Oil.—State what means are provided for emergency supply

Is the emergency reserve sufficient to maintain lubrication as per Rule

YES

Mechanical Balance.—Are the Engines and Generators balanced so as not to cause appreciable vibration

Report.—Has a separate report Rpt. 4a for the Engines been issued **FOR FULL PARTICULARS, SEE
NEWCASTLE REPORT NO 104293**

OIL ENGINES.—Type of Engines

Revs. per minute

Is a Governor fitted

Is the speed variation as per Rule when load is thrown off

Is an Emergency Governor fitted

Does it operate as per Rule

Rating.—Has each Engine been tested and found to be capable of developing 10 per cent. overload for one hour as per Rule

Report.—Has a separate report Rpt. 4b for the Engines been issued

GENERATORS.—Direct or Alternating Current

No. of Generators

If alternating current state number of phases

frequency

Kilowatts per Generator

Voltage per Generator

Amperes per Generator

Do they comply with the requirements regarding insulation materials

Terminals, coolers, thermometers

Lubrication, position in ship

YES

temperature rise

Embedded temperature detectors

shaft currents

Ventilation.—State how this is arranged (open or closed system)

If open system are ventilating arrangements satisfactory

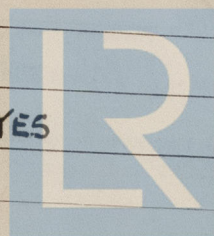
Heating when Idle.—State what provision is made

Facilities for Inspection and Repair.—Are these as per Rule

Are wear-down gauges supplied

Drainages.—Are the arrangements to prevent accumulation of bilge-water under the machines satisfactory

YES



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MOTORS.—S.H.P. per Motor at full power

No. of Motors

Amperes per Motor

Single or double unit

Voltage per Motor

Do they comply with the requirements regarding insulation materials

terminals, coolers, thermometers, ventilation

heating when idle, shaft currents, facilities for inspection and repair

mechanical protection, lubrication, position in ship

A.C. Motors.—Are the laminations securely clamped around the whole of the periphery

and are they insulated from one another with approved material

Is provision made for machining the collector rings

Do the Motors remain in step under all normal conditions of running

D.C. Motors.—Are the brushes staggered as per Rule

If the system permits overspeeding at light loads are overspeed protection devices fitted

EXCITATION.—Is current for excitation taken from the ship's Auxiliary Generators

If so state voltage and excitation amperes at full power kilowatts for excitation

State arrangements for excitation of Propulsion Generators

and Propelling Motors

If an alternative means of excitation is provided, state particulars

Do the Excitation Machines comply with the requirements regarding temperature rise at full power

and after maneuvering as per Rule

D.C. Systems.—Are the arrangements for Motor and Generator excitation as per Rule

CONTROL.—Position of Main Control Panel

Do the Control Panels comply with the requirements regarding position

distance from combustible material

and instruments, insulating materials (state what type is used)

spacing and shielding of live parts

position of fuses, proportioning of busbars

locking of screws and nuts, labelling, fuses for voltmeters, etc.

switches and circuit breakers, fusible cutouts

proportioning of levers, connecting links, etc., interlocking

provision for manual operation of contactors, etc. (state method employed)

earthing of instrument cases above 250 volts to earth

provision of renewable arcing tips on switches subject to arcing

capability of withstanding shock and inclination

operation with high and low voltage

alignment of operating shafts

Overload and Short Circuit Protection.—State what means are provided

At what current or load is it set to operate

by hand when running at full power and found satisfactory

Earth Detection.—Is the main circuit provided with means for detecting earths

Are aural and visual alarm fitted Is main power interrupted by the occurrence of an earth fault

If a limiting resistance is connected in the earth detecting circuit what is the ohmic value

What earth leakage current is necessary to operate the device

If a switch is used to disconnect the aural signal does it automatically switch on the visual alarm

Are the excitation circuits provided with means for earth detection

Mechanical Protection.—Are circuits above 250 volts to earth protected as per Rule

Bridge or Deck Control.—Is bridge control provided

If so, from how many stations

Can they be operated freely without producing currents or loads in excess of the working capacity of the plant

and without reference to electrical instruments

Is an emergency control provided in the engine room

and can the transfer to this control be made quickly in the engine room

Can the emergency control be rendered mechanically independent of the bridge control

Instruments and Gauges.—State what Instruments are provided for each Generator

and for each Motor

and, for Steam Engines, what Gauges are provided

Is an Insulation Tester provided

Discharge Protection.—Are all circuits protected as per Rule

D.C. Systems.—If the Generators are connected in series state what means are provided to prevent reversal of rotation

Are the Propulsion Generators also used alternatively for other purposes

If so, is provision made for overload protection, voltage adjustment, etc., as per Rule

Reversing Switches.—Are any provided

If so, are they interlocked as per Rule

Resistances.—Are shunt resistances for synchronous motor fields insulated as per Rule

Temperature Alarm.—Are machines with enclosed ventilating system, etc., fitted with temperature alarm

Auxiliary Power.—Are essential services protected from interruption due to overloading of non-essential circuits

CONDUCTORS & CABLES.—Are all essential Conductors stranded as per Rule

Are the ends of Paper and Varnished Cambric Insulated Cables sealed

Are the ends of all Cables having a sectional area of 0.04 sq. in. and above provided with Cable sockets

Are all Cables carrying alternating current as per Rule

Have all Cables been tested at the makers' works as per Rule

SECONDARY BATTERIES.—Are Batteries used for starting Main Propulsion Engines

If so, have full particulars been submitted and approved

working conditions and do they give the number of starts required by the Rules

Are they installed as per Rule

Are the charging arrangements satisfactory

SPARE GEAR.—If engaged on open sea service has a list of spare gear been submitted and approved

Is a list of the articles supplied attached to this report

Are they stored as per Rule

ELECTRIC PROPULSION EQUIPMENT CONDUCTORS.

DESCRIPTION—MAIN GENERATORS.	CONDUCTORS.		TOTAL MAXIMUM CURRENT—AMPERES.		MAXIMUM VOLTAGE TO EARTH.	INSULATED WITH.	DI-ELECTRIC THICKNESS.	HOW PROTECTED.
	No. per Pole or Phase	Nominal Area per Pole.	In Circuit.	Rule.				
MAIN GENERATORS Alternator	4	3" x 1/8"	1400	—	1732 AC	AIR	—	Copper bus-bars supported in steel trunk
GENERATOR FIELDS of Alternator	1	0.4	260	464	220	V.C.	1000V GRADE	L.C.
MAIN MOTORS (per Half Unit)	2	0.3	700	770	1732 AC	V.C.	3000V "	L.C.
MOTOR FIELDS (per Half Unit)	1	0.15	210	246	700 AC	V.C.	1000V "	L.C.
CONTROL CIRCUITS								
OTHER CIRCUITS:—								
Auxiliary Alternator	1	2" x 1/4"	200	—	665 AC	AIR	—	Copper bus-bars supported in steel trunk
Auxiliary Alternator Field	1	0.1	120	191	220	V.C.	1000V GRADE	L.C.
Booster Supply	1	0.1	150	191	220	V.C.	1000V "	L.C.
Booster Generator	1	0.4	260	464	220	V.C.	1000V "	L.C.
Main Motor Vent Fan	1	0.06	114.5	135	220	V.C.	1000V "	L.C.
Excitation Supply from Aux. Generators	2	0.4	700	928	220	V.C.	1000V "	L.C.

All particulars as per Messrs C.A. Parson's Drawing No 64272.

Approved 19/12/44.

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All Conductors are of annealed copper, conforming to International Electrotechnical Commission Publication No. 28.

The Insulated Conductors have withstood the dielectric tests specified in the Rules.

The foregoing is a correct description



Electrical Engineers.

Date

4/9/47

COMPASSES.—Are Single-Conductor circuits carrying continuous current arranged with lead and return Conductors fitted as close to one another as possible

YES.

Have tests been made during adjustment of the Compasses to determine the effect of switching the main circuits on and off

YES

The maximum deviation due to electric currents was found to be NIL degrees on ANY course in the case of the

Standard Compass and NIL degrees on ANY course in the case of the Steering Compass.



Builders' Signature.

Date

4/9/47

Dates of Survey while building
During progress of work in shops -
During erection on board vessel -
Total No. of visits

4th, 12th, 17th, 20th, 22nd & 30th June, 31st July, 7th & 12th August, 1947.

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Is this machinery duplicate of a previous case YES If so, state name of vessel "BEAVERLAKE"

General Remarks (State quality of workmanship, opinions as to class, &c.) The electrical propulsion machinery of this vessel has been installed under Special Survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.

It is eligible, in my opinion, for classification, with the record of + LMC 8.47.

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee ...

{ CHARGED AT NEWCASTLE

When applied for,

When received,

B. Haffner.

Surveyor to Lloyd's Register of Shipping.

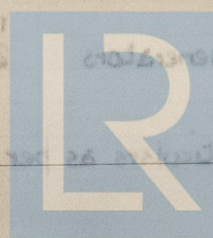
Committee's Minute

GLASGOW

9 SEP 1947

Assigned

SEE ACCOMPANYING MACHINERY REPORT



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