ELECTRO-MOTIVE DIVISION • GENERAL MOTORS CORPORATION
SERVICE DEPARTMENT

MAINTENANCE INSTRUCTION

CHECKING AND SETTING TRANSITION SW900 AND 1200

INTRODUCTION

The purpose of this procedure is to check the transition on the SW900 and SW1200 locomotives with a D25 generator. This will be done using the resistance in the battery field circuit by energizing either singly or together SSC-AB and SSC-CD. By doing this, the battery field current will be controlled, and as a result so will the main generator short circuited current be controlled.

By using the resistance designed in the battery field circuit there will be no need to use a carbon pile or some other external resistance, thereby greatly simplifying the test procedure.

DRAWINGS REQUIRED: Applicable Locomotive Wiring Diagram (8351315 Basic)

Applicable Charts and Graphs

EQUIPMENT REQUIRED
For each test procedure

1. (2000-3000) amp 50 MV shunt.
2. MG set.
3. Two jumper wires.
4. Use two X1—1100/24 cables.
5. Millivoltmeter (0-50) MV.
6. (0-1000) voltmeter.
7. One test light.

PRELIMINARY SETUP

OBJECTIVE	OPERATION
1. In order to monitor main generator current.	Remove generator shunt panel. In its place use a (2000-3000) amp 50 MV shunt. Put a (0-50) MV voltmeter across the shunt at the meter terminals.
2. In order to isolate the output of the MG set from the main generator.	Remove the GN8 and GS6 wires leading to PTR-M and RE10A respectively.
3. To simulate main generator voltage across the pickup and dropout resistors.	Connect the positive output of the MG set to RE10A and the negative output to PTR-M.
4. How to exercise control of main generator current by controlling BF current.	In order to control battery field current and thus control main generator short circuit current use battery field resistance (A1-B1) and (A2-B2), and put a 7.9 ohm headlight resistor in parallel with LR. Utilize RE-BF, if necessary, by energizing SSC-AB and SSC-CD either singly or together, and; therefore, by either raising or lowering the resistance in series with BF control BF current.

5. How to keep BF energized.	Energize SF and as a result BF will be energized by jumpering P2-F to TR-G.
6. How to get a maximum resistance from LR, and; therefore, more readily keep BF current in the range desired for the test.	Jumper CLR-AB to energize ORS which keeps LR in minimum field and, therefore, have a maximum, approximately 12 ohms, LR resistance.
7. How to prevent the unit from attempting to make transition, and how to get an indication of the above mentioned.	Disconnect wire 11B from PTR-D. To get an indication of PTR pickup hook a test lamp between PTR-D and battery negative.
8. To get the needed resistance to control BF current in the range of values needed for the test.	Connect a 7.9 ohm headlight resistor from terminal board 12R2 to 12R1 so that it will be in parallel with LR to get the needed resistance to control battery field current.

TEST PROCEDURE

1. Start the engine.
2. Connect input of MG set across the battery knife switch.

WARNING: Do not short the main generator before starting the engine.

3. Short the main generator by jumpering from the GS side of the equipment bus to the GN side of the shunt panel. Use two 1100/24 cables.
4. Position the selector handle switch in "AUTO", but have the reverser centered. As further protection remove wires MK and MK6 from GS.

NOTE: Adjust MG set voltage to 800 volts for at least five minutes to allow resistors to warm up.

5. Check PTR pickup.
   a. Position the throttle in No. 6 position and this will give approximately 800 main generator amps.
   b. Battery field amps should be approximately 12.5 amps.
   c. Slowly raise MG set voltage until PTR picks up.
   d. Plot on Charts and Graphs, and adjust slider on RE10B if necessary.
6. Check PTR dropout.
   a. Pick up PTR as described in Step 5 (a—c) inclusive at the same amperage.
   b. Slowly lower MG set voltage until PTR drops out.
   c. Plot on Charts and Graphs, and adjust slider on RE10A if necessary.
7. Check PTR pickup and dropout at another point.
   a. Disable headlight resistor from the circuit.
   b. Follow procedure outlined in Steps 5 and 6, except position throttle in No. 3 position and this should give about 350-400, main generator, amps.
   c. Battery field current should be about (5.5-6.0) amps.
   d. Plot results on Charts and Graphs and adjust the appropriate resistors if necessary.

NOTE: The test is complete; return all circuits to normal before placing unit in service.

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