

Maintenance Procedure

No. P802

Page 1 of 2

TASK DESCRIPTION
TEST ACCURACY OF SPEED INDICATOR AND LOCOMOTIVE OVER SPEED SETTINGS. ENSURE ZERO SPEED SYSTEM PICKS UP AND DROPS OUT AT 3 – 4 MPH.
BUILDER'S OR VENDOR'S MAINTENANCE INSTRUCTIONS
SPECIAL TOOLS REQUIRED: Speed Indicator Verifier - either BARCO or Bach Simpson
RELATED MAINTENANCE PROCEDURES MODIFICATIONS, POINTERS, ETC. F59PH-3 Locomotive Electrical Schematic, page 43 or MP40PH-3 Loco. Elect. Schematic, page 33.
SAFETY PRECAUTIONS: CONTRACTOR TO ASSUME RESPONSIBILITY FOR SAFETY RULES AND COMPLIANCE.
PREPARATION: 1) Secure locomotive from movement. 2) Place the battery knife switch and breakers in the black section of the circuit breaker panel, including the ER/THS SPEED and MCU breakers in ON position.

PROCEDURE

1. At the isolation amplifier (located in the short hood or under the cab floor – depending on locomotive series) disconnect the bottom electrical plug and connect the plug from the verifier.
2. Gradually (starting from zero) adjust the verifier until either the Zero Speed Relay (located on the MP40 locomotive) or the Auxiliary Speed Relay (located on the F59 locomotive), at top-right side of main electrical cabinet drops out at speeds 0 – 3 mph. The pick up and drop out for either relay is audible during the test procedure.
3. Reduce the signal supplied to the isolation amplifier and at 3 mph (indicated on the locomotive speedometer) the ZSR or ASR relay will pick up and remain energized 3 - 0 mph.
4. Verify the accuracy of the speed indicator by comparing speed indications with settings of the verifier.
 - 4.1 If using the Barco verifier, the increments of speed verification are 1 mph, 2 mph, 5 mph, 8 mph, 10 mph, 20 mph, 40 mph, 80 mph. A variable adjustment is supplied for gradual increase over 80 mph.
 - 4.2 If using the Bach Simpson verifier, the speed verification is directly related. Select manual control for gradual increase of speed display and ensure speed indicated by dual green and yellow LEDs match the centrally displayed digital numbers.

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No. P802

Page 2 of 2

5. After the accuracy of speedometer has been verified, verify the function of the Over Speed Magnet Valve in accordance to locomotive's over speed setting:
 - 5.1 On F59 locomotive, slowly increase the indicated speed until 85 mph, at which point the OSMV (Over Speed Magnet Valve), located on air brake rack, will be de-energized. This is readily audible. Reduce the test speed and the OSMV on the F59 locomotive will be heard to pick up at 83 mph
 - 5.2 On MP40 locomotive, slowly increase the indicated speed until 95 mph at which point the OSMV (Over Speed Magnet Valve), located in short hood, will be de-energized and readily audible. Reduce the test speed and the OSMV on the MP40 locomotive will be heard to pick up at 93 mph.
6. Reduce the verifier speed output to zero mph.
7. Disconnect the verifier from the isolation amplifier and reconnect the original plug.
8. Replace the speed indicator if it should prove to be defective or out of adjustment.
 - 8.1 The removed recorder is to be delivered to the shop electronics room for repairs and/or adjustment.
 - 8.2 The new or replacement recorder must be tested and verified on the locomotive.

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