

TL MICROWAVE RADIO DIVERSITY SWITCH PERFORMANCE CHECKS, ALIGNMENT, AND UNIT REPLACEMENT

This section covers the methods of making comparator and pilot monitor checks, adjustments, and unit replacements on the TL Diversity Switch Panel. For clarity, a photograph showing the Diversity Switch Panel open and closed is attached to the section.

This section is reissued to clarify and improve the in-service comparator alignment procedures. In addition, an out-of-service comparator alignment procedure has been added. Due to the extent of the changes and rearrangement of the section, the use of arrows to indicate them has been omitted.

The following test procedures are outlined:

- (a) Performance Checks — Routine
 - (1) Comparator Checks
 - (2) Pilot Monitor Checks
- (b) Alignment Procedures
 - (1) Comparator Alignment — In-Service
 - (2) Comparator Alignment — Out-of-Service
 - (3) Pilot Monitor Alignment
- (c) Replacement Procedures
 - (1) Comparator Replacement
 - (2) Pilot Monitor Replacement

In order to assure proper operation of the diversity switch, tests and alignment should be done only after it has been ascertained that all other components of the radio system are functioning properly and that the requirements of Section 409-310-502, regarding the level of the pilot tone, have been met on an in-service basis.

It is necessary in the following procedures to know the states of the various relays, whether operated or released. If this cannot be determined visually, the voltage measurements in Table A may be made for a positive indication.

| TABLE A | | |
|----------------|------------------|--------------------------------|
| OPERATED RELAY | VOLTAGE (Approx) | TEST POINT |
| K1 | 14 | DIV PIL MON TS1 term. 4 to GRD |
| K2 | 14 | REG PIL MON TS1 term. 4 to GRD |
| K3 | 18 | Comparator TS1 term. 5 to GRD |
| K4 | 3 | Across jacks GRD and K4 |

Note: No voltages will exist between the indicated terminals when any of the relays are released.

If any of the voltages listed in Table A are present and it is found that the relays are not operated, check for broken leads in the switch panel. In the case of relay K4, also check the ALM & OW fuse on the power supply.

All tests and adjustments not otherwise indicated may be made on an in-service basis.

APPARATUS:

J99262AA TL Test Set

KS-14510, List 1 and List 2 Volt-Ohm-Milliammeter (VOM)

KS-16887 Relay Blocking Wedge

26A 6 db Split Pad (Out-of-service alignment only)

19A 20 db Pad (Out-of-service alignment only)

| STEP | PROCEDURE |
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| | <p style="text-align: center;">PERFORMANCE CHECKS — ROUTINE</p> <p style="text-align: center;">Comparator Checks</p> <p>The comparator circuit compares the automatic gain control (AGC) voltages of each receiver IF amplifier of a diversity pair and initiates a switch when the difference between these two levels corresponds to a received signal strength difference of approximately 15 db.</p> <p>To properly assess the comparator operation, AGC levels should be steady and near the normal received signal levels for the diversity pair being checked. Indications of normal levels may be obtained from the routine maintenance logs kept for each radio bay.</p> <p>Comparator checks should not be made during radio path fading conditions as detected by varying AGC meter indications.</p> <p>1 On both meter panels of the diversity pair, set the selector switch to AGC and read the voltage on the 0- to 6-volt scale of the lower meter. (The selector switch shall remain on AGC throughout the test.)</p> <p>Requirement: AGC voltage shall be within ± 0.1 volt of normal level as determined from the routine test logs. This allows approximately ± 3 db variation of received signal level during test.</p> <p>2 After complying with Section 409-312-500, Fig. 1, to ensure service continuity, operate the MAN switch to DIV CH.</p> <p>3 Block relays K1 and K2 to their operated positions, using the KS-16887 blocking wedge.</p> <p>4 Insert a 15 db pad between the 1A modulator and PRE AMPL IN on the regular receiver.</p> <p>5 Operate the MAN switch to REG CH.</p> |

| STEP | PROCEDURE |
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| 6 | <p>Set up the circuit in Fig. 1 (DIV RCVR) to send a 70 mc signal at -58 dbm into the diversity receiver.</p> <p>Note: Relay K3 should now be released.</p> <div data-bbox="584 546 1356 1207" data-label="Diagram"> </div> |
| 7 | <p>Increase the test signal in 1 db steps until relay K3 operates.</p> <p>Requirement: This switch shall occur within ± 2 db of the normal received signal level of the regular channel.</p> |
| 8 | <p>Remove the test patch from the diversity receiver and insert a 15 db pad between the 1A modulator and PRE AMPL IN on the diversity receiver.</p> |
| 9 | <p>Operate the MAN switch to DIV CH.</p> |
| 10 | <p>Remove the 15 db pad from the regular receiver and set up the circuit in Fig. 1 to send a 70 mc signal at -58 dbm into the regular receiver.</p> <p>Note: Relay K3 should now be operated.</p> |

Fig. 1 - Test Connections for Comparator Alignment

| STEP | PROCEDURE |
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| 11 | <p>Increase the test signal in 1 db steps until relay K3 releases.</p> <p>Requirement: This switch shall occur within ± 2 db of the normal received signal level of the diversity channel.</p> |
| 12 | <p>If the requirements of Steps 7 and 11 are not met, proceed to Alignment Procedures — Comparator Alignment (Steps 29 through 51).</p> |
| 13 | <p>If the requirements of Steps 7 and 11 are met, remove the test patch and restore the original patch to the regular receiver.</p> |
| 14 | <p>Operate the MAN switch to REG CH.</p> |
| 15 | <p>Remove the 15 db pad from the diversity receiver and restore the original patch.</p> |
| 16 | <p>Remove the blocking wedges from relays K1 and K2 and restore the MAN switch to AUTO.</p> |
| <p>Pilot Monitor Checks</p> <p>Pilot monitors detect the presence of 2600 cps pilot tone on each channel of a diversity pair, and initiate a switch when the tone on one channel fails or drops below a predetermined level.</p> <p>Prior to making the pilot monitor checks, it is necessary to know the level of the pilot tone on each channel as a reference point for determining the proper switching level of each pilot monitor, and also to determine if the pilot monitor circuit is operating properly. The level of the pilot tone should be within prescribed limits to facilitate any necessary alignment procedures.</p> <p>Before proceeding, the requirements of Section 409-310-502 must be met regarding proper pilot tone levels. In addition, the following instructions should be read carefully:</p> <ul style="list-style-type: none"> (a) The regular pilot monitor shall be checked first. (b) When checking the regular pilot monitor, the MAN switch shall be on DIV CH, and all references to a receiver in the following steps shall mean the <i>regular</i> receiver, unless otherwise indicated. (c) When checking the diversity pilot monitor, the MAN switch shall be on REG CH, and all references to a receiver in the following steps shall mean the <i>diversity</i> receiver, unless otherwise indicated. | |
| 17 | <p>After complying with Section 409-312-500, Fig. 1, to ensure service continuity, operate the MAN switch located on the diversity switch panel to REG CH.</p> |
| 18 | <p>On the order-wire panel in the adjacent TL cabinet or bay (near-end order-wire panel for near-end diversity switch), measure the pilot tone level between jacks OW IN and GRD, using the TL test set meter set for a 600-ohm bridging measurement on the -20 db range.</p> <p>Requirement: -20 to -24 dbm.</p> <p>Note: This is an indication of the pilot tone level on the active channel.</p> |
| 19 | <p>After checking with the Control Center, operate the MAN switch to DIV CH.</p> |
| 20 | <p>Repeat Step 18.</p> |

| STEP | PROCEDURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 21 | <p>With the VOM on the 12-volt dc range, measure the voltage on the PIL TONE LEV jacks (red +, orange -) on both pilot monitors.</p> <p>Requirement: This voltage shall be within ± 0.3 volt of the level indicated in Fig. 2.</p> <div data-bbox="519 457 1409 1312" data-label="Figure"> <table border="1"> <caption>Data points for Fig. 2 - Pilot Tone Level Conversion Chart</caption> <thead> <tr> <th>Voltage at Pilot Tone Level Jacks (V)</th> <th>Pilot Tone Level at Div SW TS-2 (DBM)</th> <th>Pilot Tone Level at OW-IN Jacks (DBM)</th> </tr> </thead> <tbody> <tr><td>-3.2</td><td>-28.5</td><td>-30.0</td></tr> <tr><td>-3.8</td><td>-27.5</td><td>-29.0</td></tr> <tr><td>-4.4</td><td>-26.5</td><td>-28.0</td></tr> <tr><td>-5.0</td><td>-25.5</td><td>-27.0</td></tr> <tr><td>-5.6</td><td>-24.5</td><td>-26.0</td></tr> <tr><td>-6.2</td><td>-23.5</td><td>-25.0</td></tr> <tr><td>-6.8</td><td>-22.5</td><td>-24.0</td></tr> <tr><td>-7.4</td><td>-21.5</td><td>-23.0</td></tr> <tr><td>-8.0</td><td>-20.5</td><td>-22.0</td></tr> <tr><td>-8.6</td><td>-19.5</td><td>-21.0</td></tr> <tr><td>-9.2</td><td>-18.5</td><td>-20.0</td></tr> <tr><td>-9.8</td><td>-17.5</td><td>-19.0</td></tr> <tr><td>-10.4</td><td>-16.5</td><td>-18.0</td></tr> <tr><td>-11.0</td><td>-15.5</td><td>-17.0</td></tr> <tr><td>-11.2</td><td>-14.5</td><td>-16.0</td></tr> </tbody> </table> </div> | Voltage at Pilot Tone Level Jacks (V) | Pilot Tone Level at Div SW TS-2 (DBM) | Pilot Tone Level at OW-IN Jacks (DBM) | -3.2 | -28.5 | -30.0 | -3.8 | -27.5 | -29.0 | -4.4 | -26.5 | -28.0 | -5.0 | -25.5 | -27.0 | -5.6 | -24.5 | -26.0 | -6.2 | -23.5 | -25.0 | -6.8 | -22.5 | -24.0 | -7.4 | -21.5 | -23.0 | -8.0 | -20.5 | -22.0 | -8.6 | -19.5 | -21.0 | -9.2 | -18.5 | -20.0 | -9.8 | -17.5 | -19.0 | -10.4 | -16.5 | -18.0 | -11.0 | -15.5 | -17.0 | -11.2 | -14.5 | -16.0 |
| Voltage at Pilot Tone Level Jacks (V) | Pilot Tone Level at Div SW TS-2 (DBM) | Pilot Tone Level at OW-IN Jacks (DBM) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -3.2 | -28.5 | -30.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -3.8 | -27.5 | -29.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -4.4 | -26.5 | -28.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -5.0 | -25.5 | -27.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -5.6 | -24.5 | -26.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -6.2 | -23.5 | -25.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -6.8 | -22.5 | -24.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -7.4 | -21.5 | -23.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -8.0 | -20.5 | -22.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -8.6 | -19.5 | -21.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -9.2 | -18.5 | -20.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -9.8 | -17.5 | -19.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10.4 | -16.5 | -18.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -11.0 | -15.5 | -17.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -11.2 | -14.5 | -16.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | <p>If the requirement of Step 18 is met but that of Step 21 for the regular pilot monitor is not, a faulty regular pilot monitor is indicated. If the requirement of Step 20 is met but that of Step 21 for the diversity pilot monitor is not, then a faulty diversity pilot monitor is indicated. In either case, check for possible misalignment or, if necessary, replace the unit.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | <p>If the requirement of Step 21 is met, make test connections as shown in Fig. 3, on the regular receiver (or diversity receiver for the diversity pilot monitor) with attenuator dials set to 0 db.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | <p>Reduce the signal level in 1 db steps until relay K2 (REG PIL MON) or K1 (DIV PIL MON) remains released. Prior to this point, the relay should release and then operate each time the attenuator is switched.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| STEP | PROCEDURE |
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| | <div data-bbox="584 420 1347 1050" data-label="Diagram"> </div> <p data-bbox="665 1071 1266 1102">Fig. 3 – Test Connections for Pilot Monitor Check</p> <p data-bbox="276 1197 1559 1260">25 Measure the voltage at the PIL TONE LEV jacks with the VOM on the 12-volt dc range.</p> <p data-bbox="389 1291 803 1323">Requirement: 3.5 to 4.1 volts.</p> <p data-bbox="389 1354 1559 1417">If this requirement is not met, follow the Pilot Monitor Alignment procedure (Steps 60 through 73).</p> <p data-bbox="276 1470 1559 1564">26 This completes the check of the regular pilot monitor. Now proceed to check the diversity pilot monitor in the same manner by repeating Steps 23 through 25, operating the MAN switch to REG CH first, and working on the diversity pilot monitor.</p> <p data-bbox="276 1606 1559 1669">27 When both pilot monitors have been checked, be sure all patches are restored before proceeding with other tests.</p> <p data-bbox="276 1722 1323 1753">28 If no further tests are to be made, restore the MAN switch to AUTO.</p> |

| STEP | PROCEDURE |
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| | <p style="text-align: center;">ALIGNMENT PROCEDURES</p> <p style="text-align: center;">Comparator Alignment (In-Service)</p> <p>These alignment procedures shall be followed any time the comparator check requirements cannot be met, and whenever a new unit is installed.</p> <p>29 On both meter panels of the diversity pair, set the selector switch to AGC and observe the voltage on the 0- to 6-volt scale of the lower meter.</p> <p>Requirement: The voltage shall be within ± 0.1 volt of that corresponding to the normal received signal level for each bay, as determined from the routine test logs. This corresponds to approximately ± 3 db variation of received signal level.</p> <p>30 After complying with Section 409-312-500, Fig. 1, to ensure service continuity, operate the MAN switch to REG CH.</p> <p>31 Block relays K1 and K2 to their operated positions, using the KS-16887 blocking wedge. (Refer to Section 069-020-801 for the procedure on blocking AK-type relays.)</p> <p>32 Set up the circuit in Fig. 1 (diversity receiver) and send a 70 mc signal to PRE AMPL IN jacks of the diversity receiver, adjusting the level for an AGC reading corresponding to the normal received signal level for that channel, as determined from the routine maintenance logs.</p> <p>33 Set the OUT and BAL controls on the comparator to their midrange position, and set the COMPR GAIN control maximum clockwise.</p> <p>34 With the VOM across jacks J6 and COMPR BIAS on the comparator, adjust the BAL control to give a 0-volt indication on the 3-volt range. In case of slight signal instability, adjust to 0 ± 0.25 volt.</p> <p>35 If relay K3 is not operated, rotate the OUT control clockwise until K3 operates. Check for 18 volts across the coil of K3 (see Table A).</p> <p>36 With the VOM (on 12-volt range) connected from the COMPR BIAS jack to ground, rotate the OUT control <i>slowly</i> counterclockwise until K3 releases. Note this voltage to the nearest 0.05 volt.</p> <p>37 Rotate the OUT control <i>slowly</i> clockwise until relay K3 operates. Note this voltage also.</p> <p>38 Rotate the OUT control counterclockwise until the meter indication is halfway between the two readings taken above.</p> <p>39 Recheck the voltage between jacks COMPR BIAS and J6. Due to interaction between the BAL and OUT controls, it will be necessary to reset the BAL control for a 0-volt indication on the VOM and repeat Step 38.</p> <p>40 Rotate the COMPR GAIN control maximum counterclockwise (minimum gain).</p> <p>Note: Relay K3 should be operated.</p> <p>41 Reduce the test signal level by 15 db.</p> |

| STEP | PROCEDURE |
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| 42 | Rotate COMPR GAIN control slowly clockwise until relay K3 releases. |
| 43 | Remove the test patch from the diversity receiver and restore normal patching. |
| 44 | Operate the MAN switch to DIV CH. |
| 45 | Insert a 15 db pad between the 1A modulator and PRE AMPL IN on the regular receiver. |
| 46 | <p>Operate the MAN switch to REG CH, and then set up the test circuit in Fig. 1 to send a 70 mc signal at -58 dbm into the diversity receiver.</p> <p>Note: Relay K3 should now be released. If not, momentarily remove the test signal to release the relay.</p> |
| 47 | <p>Increase the test signal in 1 db steps until relay K3 operates.</p> <p>Requirement: This switch shall occur within ± 2 db of the normal received signal level of the regular channel as indicated on the AGC meter.</p> <p>If this requirement is not met, repeat Steps 39 through 47.</p> |
| 48 | Remove the test patch and restore the original patch to the diversity receiver. |
| 49 | Operate the MAN switch to DIV CH. |
| 50 | Remove the 15 db pad from the regular receiver and restore normal patching. |
| 51 | Remove the blocking wedge from relays K1 and K2 and restore the MAN switch to AUTO. |
| | <p style="text-align: center;">Comparator Alignment (Out-of-Service)</p> <p>For those situations where it becomes absolutely necessary to align a comparator in the absence of a stable received signal level, the following procedure applies. It is necessary in these steps to disable both channels of the diversity pair in order to send a test signal into each receiver IF amplifier simultaneously. The following additional apparatus, not normally supplied with the TL maintenance kit, is required for this procedure:</p> <ul style="list-style-type: none"> 1 — 26A 6 db Split Pad 1 — 19A 20 db Pad |
| 52 | Operate the MAN switch to REG CH. |
| 53 | Set up the test circuit in Fig. 4 to send 70 mc signals to both receiver PRE AMPL IN jacks at the normal IF levels for each channel, as determined by the AGC meter indications. (If necessary, use the OSC LEV control on the TL test set for adjustment of proper level to the regular receiver.) |

| STEP | PROCEDURE |
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| | <div data-bbox="532 415 1404 1039" style="text-align: center;"> </div> <p data-bbox="548 1003 917 1102">NOTE: FOR NOMINAL -43 DBM INTO REGULAR RCVR, SET OSC LEV TO READ -2 DBM ON THE TEST SET OSCILLATOR METER.</p> <p data-bbox="560 1136 1380 1165" style="text-align: center;">Fig. 4 – Test Connections for Out-of-Service Comparator Alignment</p> <p data-bbox="277 1245 1550 1312">54 Block relays K1 and K2 to their operated positions, using the KS-16887 blocking wedge.</p> <p data-bbox="277 1339 1518 1369">55 Perform Steps 33 through 40 of the In-service Comparator Alignment procedures.</p> <p data-bbox="277 1402 1550 1432">56 Reduce the signal level to the diversity receiver by 15 db with the test set attenuator.</p> <p data-bbox="277 1465 1347 1495">57 Rotate COMPR GAIN control slowly clockwise until relay K3 releases.</p> <p data-bbox="277 1528 1291 1558">58 Insert an additional 15 db pad in the path to the regular receiver.</p> <p data-bbox="397 1585 941 1614">Note: Relay K3 should now be released.</p> <p data-bbox="277 1648 1550 1677">59 Increase the signal level to the diversity receiver in 1 db steps until relay K3 operates.</p> <p data-bbox="397 1705 1550 1764">Requirement: The level of operation shall be within ± 2 db of the normal received signal level, as determined from the AGC meter reading.</p> <p data-bbox="397 1789 1550 1848">If this requirement is not met, repeat Steps 39, 40, and 56 through 59. If this requirement is met, remove all test patches and restore normal patching to both receivers.</p> |

| STEP | PROCEDURE |
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| | Pilot Monitor Alignment |
| | These procedures shall be followed whenever the requirements of the Pilot Monitor Checks cannot be met, or whenever a new unit is installed. |
| 60 | After complying with Section 409-312-500, Fig. 1, to ensure service continuity, operate the MAN switch to DIV CH if aligning the diversity pilot monitor or to REG CH if aligning the regular pilot monitor. |
| 61 | On the order-wire panel in the adjacent TL cabinet or bay, measure the level of the pilot tone between jacks OW IN and GRD with the TL test set voltmeter set for a 600-ohm bridging measurement on the -20 db range. Requirement: -20 to -24 dbm. |
| 62 | Operate the MAN switch to the opposite channel from that in Step 60. |
| 63 | With the VOM across the PIL TONE LEV jacks and on the 12-volt dc range, rotate AMPL GAIN control to maximum clockwise position (maximum gain) and adjust AMPL BIAS control for a peak meter indication. Requirement: 9 to 13 volts. If this requirement is not met, replace the pilot monitor and repeat test. |
| 64 | Rotate AMPL GAIN control counterclockwise to a value corresponding to the measured pilot tone level in Step 61. (See Fig. 2.) |
| 65 | With the VOM still connected to the PIL TONE LEV jacks, set up the test circuit in Fig. 3 and adjust the attenuator for a VOM reading of between 3.3 and 4.3. |
| 66 | Disconnect the VOM from the PIL TONE LEV jacks. |
| 67 | Rotate SW BIAS control clockwise to release the pilot monitor relay, then slowly rotate it counterclockwise to the point where the relay just operates. |
| 68 | With the VOM connected to the PIL TONE LEV jacks, rotate AMPL GAIN control slowly counterclockwise until the pilot monitor relay releases, and then clockwise until the relay operates, noting the maximum and minimum voltages in each case. Requirement: The voltage swing shall be no greater than 1 volt nor less than 0.4 volt. |
| 69 | Remove all attenuation from the test set attenuator. |
| 70 | Rotate AMPL GAIN control to give the same PIL TONE LEV voltage as that set up in Step 64, and then disconnect the VOM from the PIL TONE LEV jacks. |
| 71 | Reduce the signal level in 1 db steps until relay K2 (REG PIL MON) or K1 (DIV PIL MON) remains released. Prior to this point, the relay should release and then operate each time the attenuator is switched. |
| 72 | Measure the voltage at the PIL TONE LEV jacks with the VOM on the 12-volt dc range. Requirement: 3.5 to 4.1 volts. |
| 73 | Remove all test patches and restore the original patch to RCVR OUT. |

| STEP | PROCEDURE |
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| REPLACEMENT PROCEDURES | |
| Replacement of pilot monitor and comparator units in the diversity switch panel requires only a screwdriver. Precautions have been included in the following procedures to ensure against contact with -20 volts and battery supply. | |
| Comparator Replacement | |
| 74 | After complying with Section 409-312-500, Fig. 1, to ensure service continuity, operate the MAN switch to REG CH. |
| 75 | On the diversity bay power supply panel, remove the fuses marked IF AMPL & BB and ALM & OW to remove -20 volts and the battery supply. |
| 76 | Open the hinged center panel of the diversity switch to provide access to the comparator terminal TS1. |
| 77 | Remove the leads from the comparator. |
| 78 | Remove the four mounting screws in each corner of the unit and slide the unit forward to remove it. |
| 79 | Slide the new unit into position and replace the mounting screws. |
| 80 | Replace the comparator leads. |
| 81 | Replace the IF AMPL & BB and ALM & OW fuses and align the comparator as indicated under Alignment Procedures — Comparator Alignment. |
| Pilot Monitor Replacement | |
| 82 | After complying with Section 409-312-500, Fig. 1, to ensure service continuity, operate the MAN switch to REG CH. |
| 83 | On the diversity bay power supply panel, remove the fuse marked IF AMPL & BB to remove the -20 volts to the switch. |
| 84 | Remove the leads from the pilot monitor being replaced. |
| 85 | Remove the four mounting screws in each corner of the unit and slide the unit forward to remove it. |
| 86 | Slide the new unit into position and replace the mounting screws. |
| 87 | Replace the pilot monitor leads. |
| 88 | Replace the IF AMPL & BB fuse and align the pilot monitor as indicated under Alignment Procedures — Pilot Monitor Alignment. |

