

Most separation problems are due to system problems or measurement error. If you cannot meet separation specifications, you should verify the performance of OPTIMOD-FM alone using the procedure in a.6 of the **Stereo Generator** section in **Appendix D**.

Dried-out coupling capacitors in your FM monitor can cause failure to correctly measure 50Hz separation because excellent low frequency response and phase linearity are necessary to avoid distorting the signal upon demodulation. Similarly, if you have accidentally left your scope AC-coupled, it will cause measurements to be completely inaccurate at low frequencies.

Real separation problems can be caused by:

- a) Incorrect phase adjustments in your exciter Wideband Interface.
- b) Insufficiently wide frequency response or inadequate phase linearity in composite STL or exciter.
- c) Mistuned or severely narrowband RF amplifiers and/or antenna.

7) **Pilot Phase:** Connect the oscillator to the right OPTIMOD-FM input. Switch the OPTIMOD-FM CROSSTALK TEST switch to SUB-TO-MAIN. Switch the OPTIMOD-FM PILOT switch ON.

You should see a trace on the scope like Fig. 4-3. If pilot phase is correct, the "tips" on this waveform will be perfectly horizontal, as in Fig. 4-3.

Expand the vertical scale of the scope by 10x, and expand the sweep to look more closely at the "tips", as in Fig. 4-4. Adjust the OPTIMOD-FM PILOT PHASE control until the tips are horizontal, as in Fig. 4-4.

Return the OPTIMOD-FM CROSSTALK TEST switch to OPERATE.

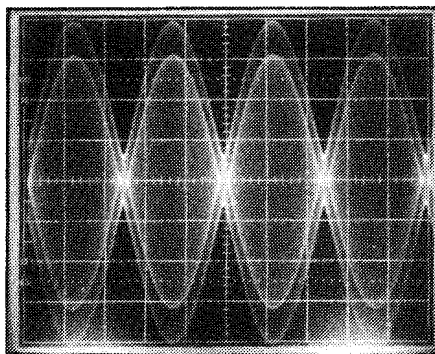


Fig. 4-3: Pilot Phase Trace

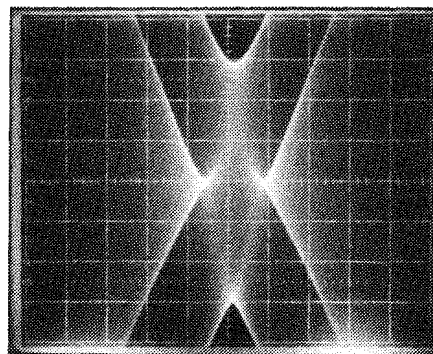


Fig. 4-4: Pilot Phase Trace, 10x