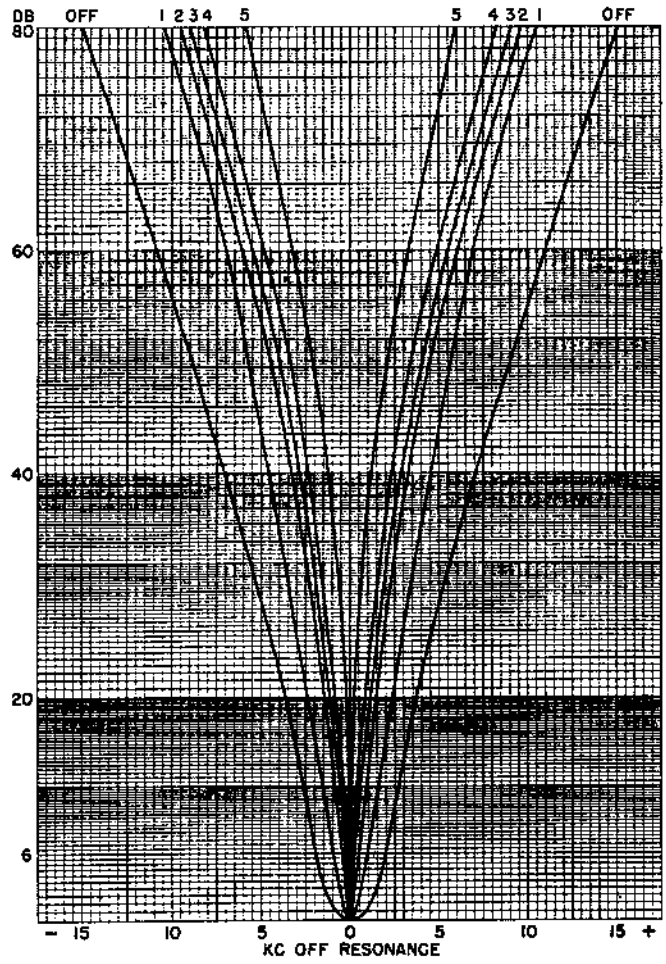

Figure 3-3. IF Selectivity Characteristics

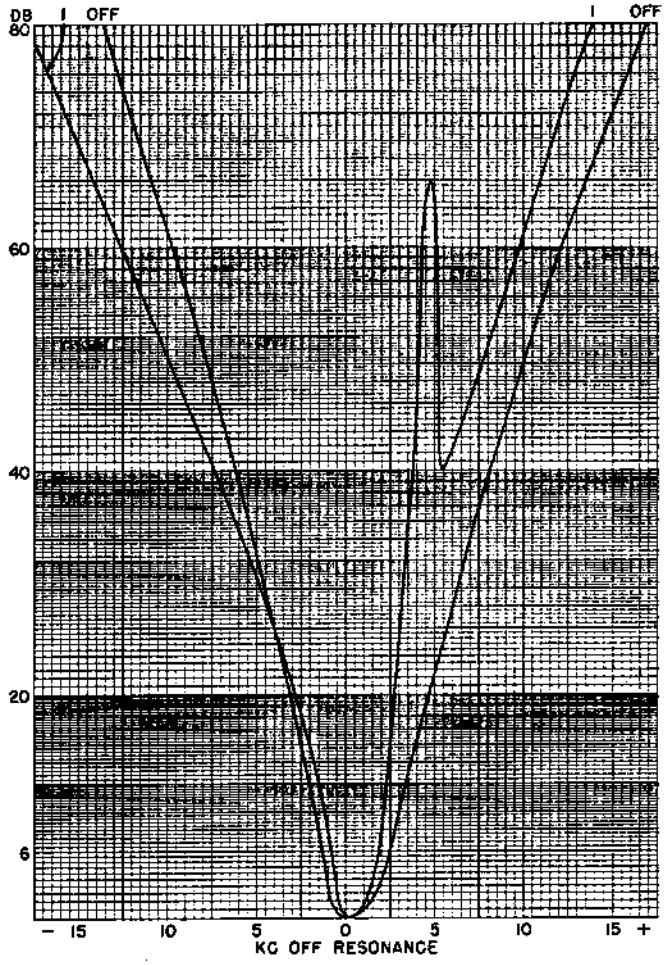

Figure 3-4. Crystal Filter Selectivity Characteristics

3.5 · CRYSTAL FILTER OPERATION

A crystal filter circuit, located in the first IF amplifier stage, is used to control the selectivity of your NC109. The SELECTIVITY and PHASING controls are used to operate this filter. Bandwidths of the filter range from 3.8 kc in the OFF position to 50 cps in position 5 of the SELECTIVITY control as illustrated in figure 3-3. The PHASING control provides a means of suppressing interfering CW or MCW signals which may produce objectionable heterodynes.

Under normal AM operating conditions, the SELECTIVITY control is used in the OFF position. If interference to the desired signal is present the SELECTIVITY control may be set to position 1 or 2. Selectivity sharper than this usually causes too great a loss of fidelity to be useful for AM operation. When using the crystal filter for AM reception, the signal should be tuned to a peak on the S-meter. The PHASING control can then be used to eliminate interfering heterodynes. If the receiver is properly tuned the PHASING control will have no effect on the signal.

Any position of the SELECTIVITY control may be used for CW reception depending on the degree of selectivity required. Position 5 will give the sharpest selectivity with the greatest freedom from interference and lowest background noise level but can only be used on very stable signals. The PHASING control introduces a "notch" (see curve of figure 3-4) which may be moved through the bandwidth of the filter to eliminate interfering signals.