

MODEL 9D

RADIO MFG. ENG. INC.

OPERATION OF THE CRYSTAL FILTER

To operate the crystal filter for single signal reception, the white dot on the knob "D" should be set to the position corresponding to "S" and the knob "C" adjusted slightly to a position where background response is a minimum. When tuning for CW signals using the crystal filter the tuning should be done with dial number 2, and rotation should be slow due to the sharp resonance characteristic of the filter. In case comparative elimination of noises does not occur when the selectivity control "C" is adjusted from side to side, it is possible that the balancing condenser has become misaligned. In order to adjust this alignment to the null point, use an insulated trimmer screw driver and adjust the pressure screw on the small mica trimmer condenser located just behind and below the crystal filter compartment. This is accessible by raising the receiver cabinet cover and removing the shield box cover of the crystal filter compartment. With the receiver merely on the air or turned to station reception, this balance can be made by slightly turning the screw either way until minimum receiver response is obtained.

When phone stations are to be received the carrier may be tuned in and the selectivity control "C" adjusted to broaden the crystal response. Although the result will be mostly a low frequency audio output, sufficient articulation frequencies are passed to make phone reception intelligible. Of course, when the crystal is used for phone reception the apparent strength of the speaker output is reduced due to the fact that the crystal has eliminated most of the side bands of the modulated carrier and since these eliminated higher side band frequencies contain some of the sound energy going to the speaker, the net effect is a reduction in sound output. However, with CW reception, when the carrier to be received, is exactly tuned there is no reduction in the signal beat when the crystal is being used.

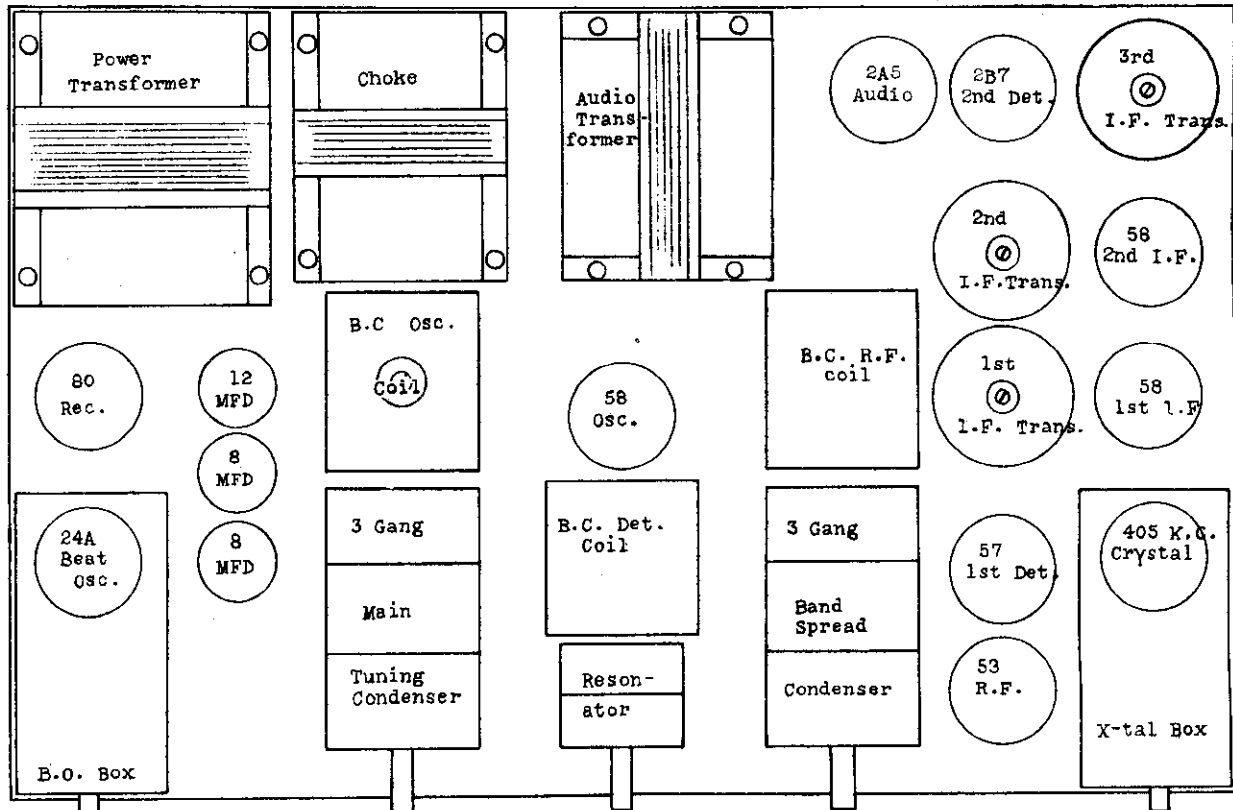
When the crystal is placed parallel in the filter circuit (knob "D" set to position B, diagram 40A) it tends to short circuit (series resonance) at its resonant frequency. This function is valuable for eliminating interfering heterodynes and its effect may be sharpened and broadened slightly in exactly the same way as the series operation of the filter. Its use in this manner is many times of invaluable service in connection with radio telephone reception.

THE MONITOR FOR MODULATION

On the rear of the chassis (Figure C) is a terminal marked "monitor feed wire terminal", which is used to connect a pick-up wire to the monitor circuit. By pulling out the knob "B" the monitor circuit is connected and the radio amplifier circuits disconnected. The monitor is intended for the checking of modulation quality of a transmitter in the proximity of the receiver. For this purpose 10 feet or so, of wire lying on the floor, may be connected to the monitor terminal post. If more or less is needed that fact can be determined by noting the magnitude of the audio output. When using the monitor it is recommended that listening be done with headphones to prevent audio feed-back, especially when the transmitter modulation originates at a nearby microphone. If transcription equipment is used the receiver loud speaker may be used. Volume may be controlled by the rotation of knob "B" in the same manner as the radio volume of the receiver is controlled.

The monitor switch is operated by pulling on the knob "B" and thus also becomes the SNEED-RECEIVE switch, since it opens the plate supply to the radio and IF amplifiers. The monitoring of CW signals can be accomplished by leaving the knob "B" pushed in toward the panel in the regular radio receiving position and the manual volume control and beat oscillator knob "F" turned considerably toward the maximum clockwise position. The frequency of the transmitter must then be tuned to by the regular tuning controls and the beat note will be heard in the same manner as that of any received signal. It may be necessary in this connection to remove the regular antenna and substitute a shorter length in case the received signal is too strong. However, the manual volume control knob "F", when in the maximum clockwise position, reduces the receiver's sensitivity to a point which will accommodate most amateur transmitters.

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RME-9D CHASSIS LAYOUT-27AA

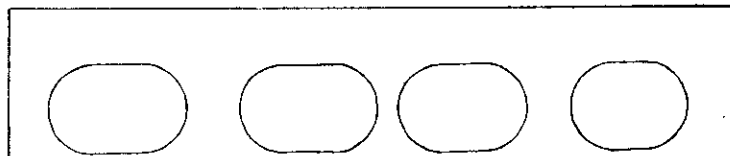
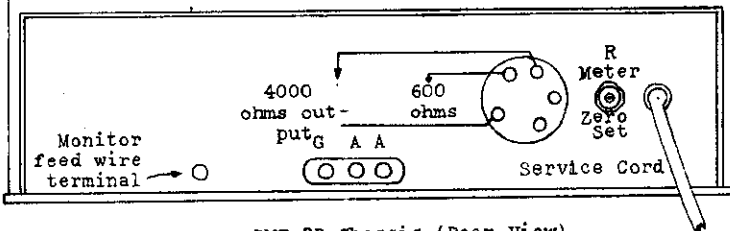


Fig. C



RME-9D Chassis (Rear View)

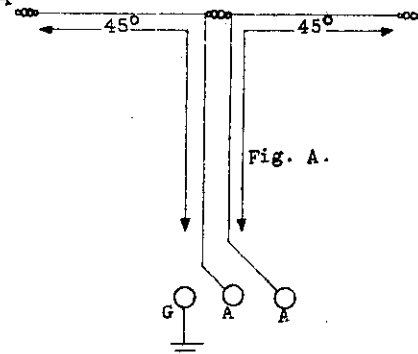


Fig. A.

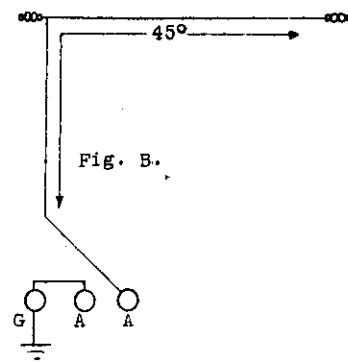


Fig. B.