Equipment for Radio Communications

**R. L. DRAKE COMPANY**

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Dear Customer:

Congratulations on selecting one of the finest transceivers on the market. It has been designed to provide long trouble free hours of rewarding enjoyment.

Every feature provided is effective and usually exceeds our advertised specifications. To the customer this means getting everything he paid for. To us this means fewer quality control problems, yielding smoother production.

Some manufacturers claim top performance while many of their features are only half-way designed. Although these features look excellent on paper, the manufacturer doesn't take that last step towards excellent performance.

A good example occurs in power amplifier ratings. Your TR-4 uses three 6JB6 tubes with a total ICAS plate dissipation of 66 watts. (This is equivalent to two 6HF5's). We chose to operate these tubes at 300 watts PEP with 650 volts on the plate. The plate voltage could be raised for greater power output but bias current must then drop to avoid excessive DC plate dissipation. Reducing bias current rapidly brings up cross-over distortion. While an additional 200 watts or more could be "squeezed" from these finals, we will not sacrifice a clean signal for an equivalent S-meter increase of 1/3 S-unit. Your TR-4 not only operates conservatively but also provides ALC which compresses the drive to just below the saturation point of the power amplifier input, further minimizing distortion.

Again, some transceiver manufacturers recommend pre-setting the audio gain and then "riding" the RF gain, a job the AVC should do. In ordinary operation of your TR-4 you will seldom have to adjust your audio gain and never adjust your RF gain. Your TR-4 AVC circuit will confine a 60 dB signal intensity change to only a 3 dB audio change.

Our single sideband filters with a shape factor of 1.7:1 and 100 dB ultimate rejection are unsurpassed in amateur radio. The narrow 2.1 KHz bandwidth passes only those audio frequencies necessary for communications, thereby concentrating the transmitted power. In receive, QRM is considerably reduced by use of this bandwidth. Separate upper and lower sideband filters are used insuring the output reference (carrier) frequency is maintained with sideband switching.

Our solid state, linear PTO incorporates low drift (100 Hertz) and 1 KHz skirt divisions. Since our PTO is neither frequency multiplied nor bandswitched the low drift and 1 KHz skirt divisions are retained on all bands.

Dual meters, allowing simultaneous monitoring of PA plate current and ALC, is a feature found in no other transceiver.

For more detailed information I hope you will thoroughly read your transceiver manual.

Very truly yours,

R L DRAKE COMPANY

H James Kittel

H. James Kittel, K8HYD
Project Engineer