

Improvements to the FT200

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The author suggests two modifications to the popular FT200. The first modification overcomes erratic indications on the panel meter which are apparently caused by grid current in the 6BZ6 RF and IF amplifiers. The second allows an increase in the time constant of the AGC system.

PANEL METER PROBLEMS

The author had experienced trouble with the metering circuit of his FT200, and as the final result was somewhat unusual, the story may be of some use to others.

The trouble began with the S meter zero wandering. This was fairly easily traced to either gas or grid emission in the 6BZ6 (V103 2nd IFA) causing current to flow through the 3.3M (R129) grid return, and so varying the bias. As both 6BZ6s in the set showed the same symptoms, the trouble was cured by fitting a 6BZ6 of Australian manufacture.

For some time after this, things proceeded normally until it was noticed that the PA resting current was dropping. The obvious suspect — the PA tubes and the bias supply — checked out OK. It was decided to let the fault "cook". However, when the current went negative, a full scale investigation was made. It turned out to be the 6BZ6 again. The metering return for the PA IC circuit goes to earth through the cathode resistor of this tube. It is supposed to cut off in the transmit position and so have no effect on the PA reading. However, the tube had intermittent leakage to grid, and this flowing through the 3.3M grid return (again!) allowed the valve to pass a variable current when it was supposed to be cut off. This allowed a reverse current to flow through the meter and so upset the PA readings. Another new 6BZ6 was called for to fix this.

However, it appeared that 6BZ6s were a lousy type and that further measures should be taken. The most obvious was to reduce the value of the 3.3M (R129) grid return as there seemed to be no reason for its high value. A 1M resistor was paralleled across it and this greatly reduced the process without any noticeable side effects on the operation of the receiver.

AGC MODIFICATION

Many suggestions have been published with the aim of slowing up the AGC fall time, and have been worthwhile modifications. However, in the author's opinion, the best way to do this is to connect a .22mf capacitor to earth from the junction of the anode of diode D103 and resistor R129.

