

422 Centurion - Troubleshooting non-zero Plate current at idle

(Floyd K8AC posted this info to the Ten-Tec reflector 6/27/2016)

When all is well, the resting plate current should be zero or nearly so with no excitation. Whether in QSK or PTT/Vox mode, standby or operate, the current should be zero. If you key the amp via PTT or QSK with no excitation, the plate current should be around 100 ma. Before, the outside cabinet temperature where the tube exhaust air leaves the cabinet was 198 degrees F. After the fix, the cabinet temperature at that point was 98 degrees F.

In my case, Q2 on the Filament-AC board was shorted as was one of the output transistors on the QSK board (either Q4 or Q5). I also replaced the ICs on the QSK board with sockets and new ICs. I know that the previous owner (SK) had experienced a tube short and that apparently caused the problems.

If you have resting plate current above zero when the amp is not being keyed, you likely have a failure in the bias circuit on the Filament-AC board, or the QSK board which controls the bias circuit on the Filament-AC board. Or, you may have an early Centurion with the original bias circuit. If that's the case, you can easily add the updated circuit to the original Filament-AC and QSK boards. See the Centurion manual currently on the Tentec website for up to date schematics of those boards.