GRID/FILAMENT SHORT - A failure of this nature can cause the amplifier to show plate current even when it is not keyed. Another indication of this problem is negative grid current on the grid meter. The tube must be replaced to solve the problem.

PLATE SHORT - A failure of this nature will cause the circuit breaker to blow. Other high voltage shorts can cause the same symptom so you must isolate the cause. If the shorted condition causes excessive plate current, the cathode fuse will blow.

LOW OUTPUT - A 3CX1200A7 can offer many years of reliable service, but if you operate the amplifier out of resonance the tubes will eventually go soft making it impossible to drive the amplifier to full output.

SECTION 6.4 RELAY CIRCUIT PROBLEMS

RESTING CURRENT WHEN AMPLIFIER IS NOT EXTERNALLY KEYED - If the relay is keyed you will see normal tube resting current, therefore you must suspect that the relay cable, exciter's relay, or one of the relays is malfuntioning. Isolate the problem by disconnecting the relay cable. If the problem persists, the cause is in the amplifier. If the problem disappears the cause is in the exciter or cable. A problem in the amplifier would normally be caused by a short in the 12 VDC (26 VDC for 5K Classic) circuit or a defective relay.

THE AMPLIFIER WILL NOT KEY - Suspect first the relay cable, then check the exciter's relay circuit. Henry amplifiers key with 12 VDC (24 VDC for 5K) and some modern exciters use diode switching. This combination sometimes causes a votlage drop in the relay line so that the relays will not key. Measure the resis-tance across the exciter's relay contact. Any resistance can cause a volt-tage drop. If this is the case, a more sensitive external relay may be required or a modification might be required to the exciter. Another cause could be that the relay power supply in the amplifier has failed not pro-viding the necessary voltage. Check the voltage at the center pin of the relay jack. It should be between 12 and 20 VDC (20-30 VDC for 5K Classic). If there is no voltage check first the 3 AG fuses, then the components in the relay power supply. A last possible cause is a defective relay.

6.5 HIGH VOLTAGE CIRCUIT PROBLEMS

The high voltage in the amplifier can be lethal! Always disconnect the amplifier from its AC power source and turn off the power switch before you work on the equipment.

NO PLATE CURRENT WITH EXCESSIVE GRID CURRENT - This is a sure indication of a break in the high voltage line between the power supply and the tube. You MUST unplug the amplifier from the AC line and trace the circuit with an ohmmeter to find the break.

HIGH VOLTAGE SHORT - A high voltage short will usually result in the circuit breaker turning the amplifier off. Also there will often be an arc indicating the source of the short. Isolate the short by disconnecting the