IMPORTANT ADDITIONAL INFORMATION

While tuning 811 tube type amplifiers always limit the transmitting time to no more than 5 seconds with a 10 second cool down. It is best to use CW, FM, RTTY Mode or a Tuning Pulser when tuning an amplifier. This will make it easier to see the peak of the meters while adjusting the plate and load controls. A wattmeter should be used to properly tune an amplifier.

Preset the plate, load and band-switch knob according to the manual. Then set the transceiver's power to a desired drive level. It is always best to start at low drive. (about 20 watts).

While transmitting adjust the plate control for peak output power by watching the power meter. (Limit 5 seconds) Then adjust the load control for peak output power. (Never exceed 5 seconds of transmission time). If the amplifier is producing the desired amount of output power then re-peak the plate control to make sure it is still at its peak for output power. Make sure the plate and grid current meters never go beyond the maximum rated values.

If more power is desired from the amplifier and the grid and plate currents are below the maximum values, increase the transceiver's power until the grid meter reaches the maximum level for the tubes. Then retune the plate and load control for peak output power. Do not transmit for more the 5 seconds. (When the output power is increase it will cause the tubes to heat up faster than at low power.)

On the final tune make sure the **load** control is on the clockwise direction of the peak.
It is always good to reduce the transceiver's power about 5 watts after tuning.

Then switch transceiver to SSB mode. Never increase the transceiver's power after tuning the amplifier. The power that was being produce in the tune mode is still the same for SSB just the meters on the amplifier are not fast enough to respond to voice peaks. The output is usually about 20 % higher because the high voltage is closer to no load voltage. Depending on the voice, and the amount of speech compression, the meters on the amplifier will read only about 1/3 to ½ of the real current. This is also true with wattmeters. Wattmeters usually read only about 50 % of the PEP power when operating on SSB. Bird Model 43 type meters may only read about 10% of the output power. Some wattmeters are label peak and average but only read average peak when in the peak position. Wattmeters that read true power usually have to have a power source of some kind to make the meter work and should be label as True PEP or Active reading.

When tuning and operating the amplifier make sure the VSWR does not go high on the antenna. No more than 2:1 for full power or 3:1 for half power. The transceiver's internal tuner cannot be used when using an amplifier. An external tuner will have to be used between the antenna and the amplifier when the antenna's VSWR is too high.

Remember the output power meter will only read half the power going out when operating SSB. If the meter read 300 watts then it is close to 600 watts PEP, unless the meter is a true active meter circuit.

If the amplifier is driven with exactly the same amount of power in SSB as it was during tune up the output will be at least the same and normally more. Just the wattmeter can not respond fast enough to give an accurate reading.

ALC Adjustment and Operation.

The ALC control is another way to reduce the transceiver's output power.
Leave the ALC disconnected and tune the amplifier to the desired output level, not to exceed maximum plate or grid current, or maximum output power.

Then connect the ALC line with the ALC adjust fully clockwise (facing the back of the amplifier).

Next transmit with amplifier operating and adjust the ALC until the grid meter or output power starts to drop. Stop at the point when the meter starts to drop.
The ALC is now set for the desired level of operation.
Increasing the transceiver's power control should not make any change to the meters on the amplifier or the drive power. This will verify the ALC is controlling the transceiver.

TROUBLE SHOOTING.

VSWR goes high on the output meter when tuning:

1. Try tuning the amplifier into a dummy load with the tuner in by-pass or direct.

If the amplifier tunes up ok with the dummy load connected, it could be the tuner, feed line or antenna.

2. Place the dummy load at the output of the tuner and tune the antenna tuner into the dummy load with amplifier in standby. Then tune the amplifier

If the VSWR reads ok with the amplifier

3. Place the dummy load at the end of the feed line (at the antenna end.). Measure the VSWR with the amplifier in standby. If the VSWR is low then place the amplifier into operate and measure the VSWR. If the VSWR is low then it would have to be the antenna, unless the VSWR was cause by a loose connection.

Grid meter goes backward and the Ip reads forward with no drive, amplifier in standby.

1. 811A tube has a filament grid short. Try removing all tubes then insert one in at a time.
2. If the tube arced then it could be a MOV shorted on the filament winding of the transformer.
3. There could be a shorted .01 capacitor in the bias line to ground

Grid meter reads higher than normal with very little plate current.

1. D16 is shorted. It will also cause the plate and grid current meter to track instead of moving in opposite directions.

Amplifier blow fuses on turn on.

1. Check the tubes for a short. Remove the connectors off the top of each tube and let them hang in the air, not touching anything. The replace the fuse and turn on. If it power up then there is a shorted tube.
2. Check the HV capacitors for shorts. Check rectifying diodes for shorts.