# ZED AUDIO CORPORATION

## RESTORATION OF THE MARANTZ 7T PREAMPLIFIER

**The 7T was released in 1965 and was the best solid state preamplifier of that era.**

**Mcintosh introduced their C24 solid state preamplifier one year earlier, Dynaco released their PAT 4 in 1967 and Harman released the Citation 11 in 1973.**

**In my opinion none of these came close to the performance of the Marantz 7T.**

**One thing all these preamplifiers have in common is the quality of the electronic and mechanical parts. In addition they all suffered from poorly designed power supplies.**

**The Marantz and McIntosh are the only two to utilize simple series pass regulators in their power supplies and the Dynaco PAT5 used one but only for the phono preamplifier.**

**All had quite high output impedance and so low capacitance cable and a short run to the power amplifiers was mandatory. However the Marantz's output stage uses a CFP design so it's output impedance is an order of magnitude lower than the others.**

**In terms of measured specifications the Marantz was far ahead especially in the noise department where the noise in phono mode was 10dB better than the McIntosh, it's closest rival.**

**Build quality goes to the McIntosh which is really way beyond the pack.**

**All run in pure class A in all their various amplifying blocks.**

**I have been doing restoration on Marantz 7T's for many years and all my clients have complimented me on a vastly improved listening experience after the restoration has been done.**

## The Restoration Process:

**Upon receiving the units, I carefully unpack and look very any damage during shipping. Fortunately never had a mishap here.**

**The knobs and front panel are removed, cleaned and carefully packed away until final assembly.**

**Inside the 7T are five hand assembled "boards" which are not PCBs in the traditional sense. They are aluminium panels with turret lugs inserted at various locations to suit the hand assembly process. The transistors are plugged into small 3 pin bases which greatly simplifies the exchange of the transistors.**

**All resistors, capacitors and diodes are hand wired between the turret lugs and the transistor bases.**

**Every part has it's leads twisted around turret lugs and transistor base pins for added mechanical stability.**

**I remove these 5 boards for modification which entails removal of almost all the parts and replacing them with high end versions which simply were not available when the 7T was manufactured.**

**My clients have the option to choose which coupling capacitors they prefer or they leave that choice to me.**

**Next into the trash bin is the volume and balance controls. These are replaced with a Blue Velvet Alps part for the volume and a Bourns conductive plastic part for balance.**

**The balance control is different to the original design where the signal had to pass through the balance control's carbon element which impacted the sound greatly.**
**In my re design the balance control is wired in shunt mode where the signal only passes through a single metal film resistor and the Bourns shunts either left or right signal to ground depending which way the Balance potentiometer is turned.**

**Next all the RCA sockets are removed. The rivets which held the bakelite assembly of the original RCA assemblies are retained purely for cosmetic reasons.**

**I place a dab of quick dry epoxy at the rear of each rivet to stop them rattling around.**

**Tiffany RCA sockets are then installed at all locations.**

**The power cord is removed and later a 3 wire cord is attached with the chassis of the 7T now at safety ground potential.**

**Note: All other equipment which has a 3 prong power cord and whose audio ground circuits are electrically connected to their safety ground should use a ground lift adaptor otherwise ground loop hum is 100% guaranteed.**

**Various resistors and capacitors on the rotary switches are replaced with better quality parts.**

**All switches are cleaned and checked for correct operation.**

## Power Supply Board:

**This board is completely stripped of all parts.**

**A new regulator circuit is installed along with fast recovery rectifier diodes.**

**All the capacitors are low ESR 105C types. and the amount of capacitance is increased from the original 850mfd total to 6,500mfd total.**

**In addition the local bypass capacitor for the RIAA amplifier is increased from 350mfd to 3,300mfd.**

**A Toshiba 2SC5200 (230v 15A 30MHz) pass device is installed together with the other regulator parts.**

## Filter + Centre Channel, Tone Amplifier (High level), Record Output and Low Level (RIAA) Boards:

**These four boards are stripped of almost all of their parts. I retain a few diodes which perform fine.**

**Metal film resistors with a Temperature coefficient of 10ppm are installed together with film and electrolytic capacitors. The capacitors are all bypassed with polystryrene 0.01mfd types. I have found that this combination works well in the 7T.**

**Transistors are replaced with High Ft low noise types.**

**Once the boards are complete they are tested outside of the pre amplifier.**

**The power supply is installed first.**

**Next the Filter + Centre channel board is installed and re tested.**

**The Tone amplifier is installed next and again the complete signal path is tested.**

**The record output board is wired in and tested and finally the RIAA board is installed and tested.**

**The RIAA equalization parts are hard wired on the selector switch. These are trimmed if required once the RIAA curve is plotted.**

**The pilot lamp is replaced with a white LED, the front panel is replaced and top and bottom panels are installed.**

## Testing:

**The preamplifier is left on for a few days and then full Audio Precision tests are run.**

**The test results of my latest restoration may viewed in the separate link.**

**Finally I take the 7T home and listen on my home system. To date I have never had a 7T which did not perform to my expectations.**