Subject: Re: Magnatone Model MP-3
Posted by Thermionic on Thu, 19 Jan 2006 06:40:25 GMT
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Howdy Stratcat,It sounds as if what's going on here is caused by two problems. One, the AC line voltage. Back when your amp was made, the U.S. line voltage was only 110 - 115 volts. Now, it's around 120 and frequently as much as 125 in places at certain times of the day.Two, the rectifier tube. I'm not familiar with this particular Magnatone, but I assume it's tube rectified. If it has the improper rectifier tube, the voltage can be very high, especially considering the higher line voltage on top of it. If it uses a 5U4 and say, a 5AR4/GZ34 is being used, that alone will account for around 40 volts of the excess voltage.Almost certainly, some of the carbon composition power supply resistors have drifted in value over time. Drain the filter caps by turning the amp off while playing at high volume, and strumming your guitar until the sound totally fades away. Check the values of every voltage dropping resistor in the power supply. If it's like most Magnatones, it uses 12DW7s for the vibrato circuit. This tube, also known as a 7247, is a 12AX7 in one section and a 12AU7 in the other. People frequently substitute 12AT7 or 12AX7 types for them, and while they will work, performance will be poor. Make sure the tubes are correct. Improper types here can also cause slighty higher than normal power supply voltage at certain points. The 12DW7's "12AU7" section draws a lot more current than a 12AT7 or especially a 12AX7, and the improper type's lower current draw will not drop as much voltage across a given resistor.These are some things to look for initially. If you can get the voltage pretty close to what it should be by trying these things, then what's left is because of higher line voltage. Tweak it down to the correct value by first biasing the amp, and then measuring the voltage dropped across the first power supply resistor. Use Ohm's Law to calculate the current draw through that resistor, and then replace it with a higher value that will render the right voltage. Voila, good as new! Since the power transformer runs cool, the voltage is too high, and you didn't note that the amp hummed, the filter caps are hanging in there. But, you may wanna replace them soon if they are very old. Plus, the super high voltage you're seeing right now can fry them.I hope this helps.Thermionic