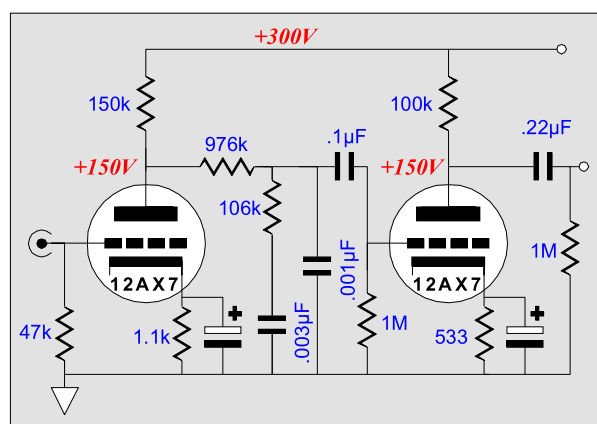


This basic topology offered a simple way to achieve feedback and equalization in one step. The topology's limitation was that the feedback network itself constituted a severe load at high frequencies and that the maximum gain that was realizable from any two cascaded triodes limited the amount of available feedback. (The equalization capacitors decrease in impedance with increasing frequency and thus they load down the output; more gain stages endanger the fragile feedback stability.) Was this topology the end of the line for tube phono stages?

Back in the 70s, I remember the parade of boring schematics, the same conventional two-gain stage active equalization topology, differing only in component values, a relentless striving to squeeze greater performance from basically the same circuit. Then in the late 70s, the great French audiophile and tube fancier Jean Hiraga designed a preamp with zero global feedback loops and with a passively equalized output signal. H.L. Eisenenson and friends at *Audio Directions* in San Diego, California then mirrored his efforts. But passive equalization was not anything new, as anyone who had read a RCA tube manual had seen the RCA-recommended circuit that used a passive equalization in between two 7025-based-ground-cathode amplifiers. And many cheap tube-based stereo consoles used passive equalization. But it did seem fresh to those who had painted themselves in the old topological corner.



Passive equalization preamp

Starting in the late 70s and early 80s, several commercial preamps appeared that used the passive equalization approach: the Counterpoint 5.1, the NYAL *NCP-1*, and several very high-end Conrad Johnson preamps.

Then the CD came out and the need for a better tube phono preamp topology seemed to disappear. (Yet in the 80s and the 90s we saw some of the best tube phono preamps being made: the MFA *MC Reference* and the Audio research *SP-11*, for example.)

Why Equalize?

If implementing an RIAA equalization curve is such a hassle, why not just record and playback a flat signal free of equalization? It could be done, but the LP would have to be renamed the VSP for “very short play.” To allow greater playback times (bass signals must be attenuated to conserve groove width) and to improve the high-frequency signal-to-noise ratio (high frequency signals must be accentuated to overwhelm the ticks and pops of a record’s surface), the sound recorded onto a phono album must follow a special equalization curve. The lows are greatly attenuated and the highs are greatly boosted. At playback the inverse of the recording EQ curve must be employed to return the signal to flat by boosting the lows and cutting the highs.

Since the need for equalization is not going to go away, we must decide how to implement it: actively or passively or a blend of both. Each approach has its adherents and distracters.

