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Subject: Re: Practical limit to tube based phono preamps

Posted by [gofar99](#) on Wed, 21 Dec 2022 01:50:12 GMT

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Hi Wayne, indeed since my very first project I have tried to reduce hum and noise. All my projects now are low distortion typically in the 1% range except for power amps at full output which can get to about 4% just before going tilt. (they flat line because of the CCS) The line stages, phono preamps and headphone amps are in the 1% range. All are wide band as well. The phono preamps are nearly ruler flat on a RIAA curve and extend to about 35K. The line stages can get to 75K with good tubes and capacitors. The power amps are within 0.5db of flat from (depending on the actual size amp) 10-15 HZ to roughly 35K. With the minor bit of NFB off (it is there to prevent resonances above the audio band in the power amps) they typically will reach 65K at only 2-3 db down. BTW I use the NFB in place to insure stability with my electrostatics as they look like huge capacitors and drop to 1 ohm at 20K. Never heard and issue...but just to be safe. This does remind me of my first attempt at a phono preamp in 2009. Fairly similar to the topology of the present ones. It could detect a hum source from 5 feet away. I went through about 5 different variations then and finally got something in the -60 to -65db range. OK, but not good enough. It took about 5 years to get something I liked. Even then it was only about -70. Those extra db in the newest ones took a lot of trial and error. A lot of things matter but grounding and component placement are the top two. I don't recommend folks design their own phono preamps unless they have a lot of experience and patience. I nearly gave up.

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