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Subject: Re: Practical limit to tube based phono preamps

Posted by [positron](#) on Fri, 13 Jan 2023 22:37:48 GMT

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From my understanding, ragged edges, rough wire surface, impurities in the material/copper cause eddy currents and is one source of noise. I can't remember which resistor company discussed this aspect though.

A couple of decades ago, the finite number of NOS vacuum tubes and prices worried me. So I searched, tested and found the small signal JJs not only had the lowest harmonic distortion I had ever measured, -79db below the fundamental, but the sound quality was the most accurate/natural.

I have gobs of Bugleboys, PQs, and others, but the JJs won out with visitors as well.

(I am not affiliated with JJ in any way, shape, or form. I am also retired for some 10 years from designing, but still tinker.)

I am not saying harmonic distortion is the only criteria, but it sure helps. Sovteks, EH and others are ok, but they are not NOS and not JJs.

Turned out the harmonic distortion of the JJ E88cc (prob others as well) was some 1/10th (-19db) that of any other tube I have ever tested. The materials used are also excellent.

Still, dealing with such small signals as the OP, one has to deal with the noise and hum. For me, it is by far the noise over hum.

Tubes with high Rp and RL (plate resistances and plate resistors) tend to have the highest noise levels as well.

I know, kind of a diatribe. Thoughts just run together sometimes.

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