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## **Letter to the Editor**

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*Marcel van de Gevel writes:*

*Dear editor,*

When I read Bob Cordell's excellent article on the VinylTrak phono preamplifier, I noticed that his estimate of the effect of the thermal noise of the 47 kOhm termination resistor was much smaller than mine.

Based on the 3852 Hz rule derived in my article "Noise and moving-magnet cartridges" (Electronics World October 2003, pages 38 to 43), the thermal noise current of a 47 kOhm resistor connected to a 500 mH cartridge should have about the same effect on the total RIAA- and A-weighted noise as a 7.2 nV/sqrt(Hz) white input noise voltage source. For a 370 mH and 830 ohm cartridge with 18 kOhm load resistor (Shure V15-V in damped mode), this even becomes 8.6 nV/sqrt(Hz).

After some private correspondence with Bob Cordell and some additional LTspice simulations, we both came to the conclusion that the noise of the VinylTrak could indeed be improved a few dB by adding a properly implemented synthesized loading circuit. Mr. Cordell has included the details in the supplementary material on his website.

*Marcel van de Gevel  
Haarlem, The Netherlands*

*Editor's note:*

I thank both Marcel van de Gevel and Bob Cordell for their exchange and the additional material posted by Bob at [www.cordellaudio.com](http://www.cordellaudio.com).  
Readers of the article should make sure they review the material posted.