

This spectral graph is the work of a University of Queensland undergraduate (Tim Prideaux) who conducted his final year Thesis in Electrical Engineering on guitar pickup sound. His work confirmed what our ears have been telling us. His Thesis is an 87 page document but this graph is one of the most interesting and most revealing in his Thesis.

Here's how he did it: the pickups were recorded direct into his digital console from the guitar. The guitar was my Research and Development instrument which has fast interchangeable pickguards so I can compare different pickups less than 10 seconds apart. Both samples came from the same guitar, same .010" - .052" strings with just 1 minute separation. The note sampled was the 2nd position (E) on the 4th string and was played exactly the same way in both instances. There was even more dramatic difference on the open low E string, but Tim did not translate into a graph.

Both pickups have been baselined at 164.8Hz. The horizontal divisions represent 20 phons, half division equals 10 phons which means twice as loud. The Kinman 56 is the left hand bar, the other big name noiseless is the right hand bar. Note the differences in output of harmonics. At 8KHz the 56 is putting out 3 times the energy as the other brand and at 6.3KHz it's putting out almost double. Even the lower harmonics display remarkable prominence compared to the other one. And notice how the AVn-56 has a multiple peaks and dips in the response curve, that's Fender sound all over. The other one has only one mostly with a steadily declining trace that makes it sound bland and uninteresting.

What this means is the 56 sounds more crisp, more alive with richer tone that has more sparkle, chime, thwack and overall guts. These are the characteristics that Fender single coils have possessed since the beginning. It's plain to see that the Kinman AVn-56 Mk-II sounds better simply because it's sound contains more energy of the most desirable harmonics. But hearing is believing, listen to the sound files.

