www.kinman.com >Tech Support >Glossary >Sonic >Aged sound >Aged sound fully explained

January 2011

Subject: Impersonator 54, worlds first non-aged sound hum-cancelling Strat pickup

While I have your attention I want to announce the release of an important new Kinman Strat pickup, the Impersonator 54. This pickup represents a major milestone in the evolution of hum-cancelling design for Fender genre single coils because it is the first to achieve non-aged sound.

Non-aged means scooped mids (high transparency) and brilliant highs with gun-shot attack and wide dynamic range where the sound does not break up under heavy pick attack.

The impersonator 54 is such a revolution because all existing noiseless Strat pickups with Alnico rod magnets (regardless of brand) deliver Aged sound where the midrange is more prominent, the highs are not as brilliant, the attack is softer and the sound breaks into crunch under heavy pick attack.

First let me explain Aged Sound with this rather interesting experience I had some years ago: a customer sent two 1964 Stratocaster pickups for repair, both were open circuit with broken wires in the coils. In one pickup the break was near the termination point and I was able to repair it without rewinding. The other one could not be repaired and had to be rewound, which I did using the original Formvar HF42 wire type. I wound it to the same DC resistance and tension which I judged from the repaired pickup. It looked identical and the resistance measured identical to the repaired pickup. But when I tested them in a guitar they sounded very different.

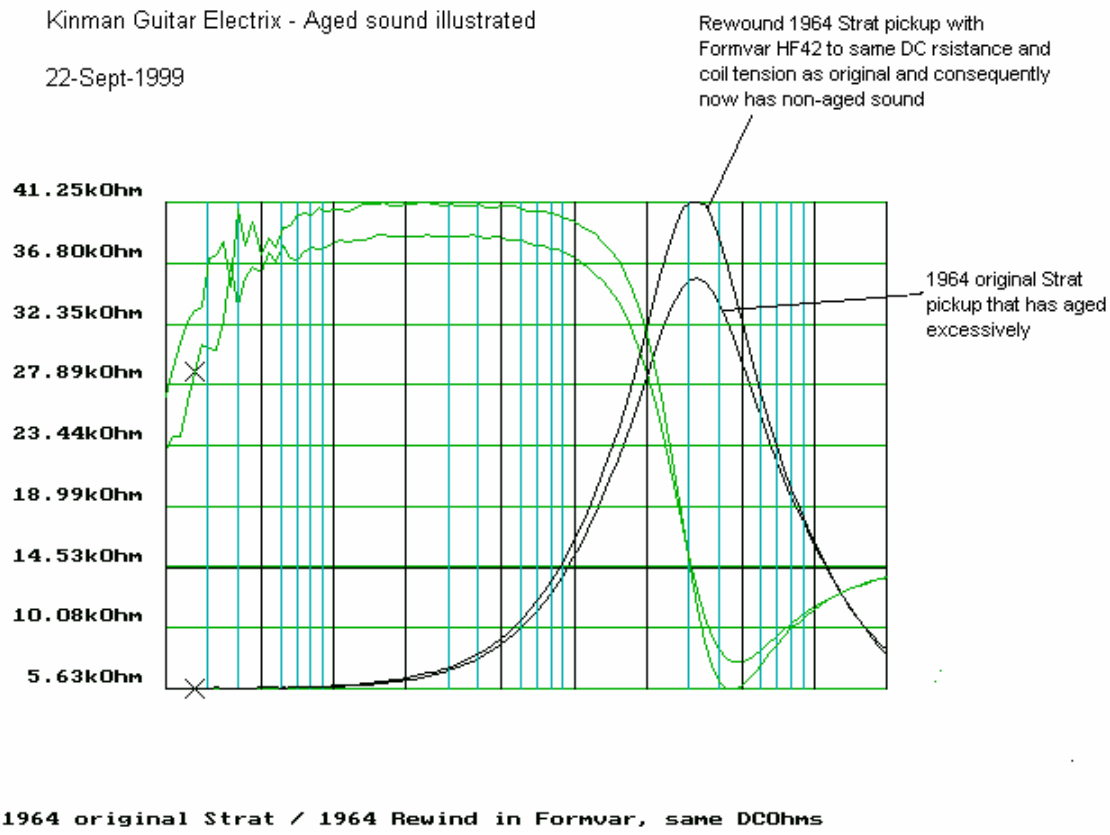
The one with the original coil which I repaired sounded dull and lifeless, it also had comparatively low output and the sound broke into distortion when I picked it strongly. The rewound one sounded just like a great NEW Strat pickup, bright, spanky, alive and loud and no matter how forceful the strings were picked/strummed the sound held together and did not break up.

With my curiosity aroused I measured the magnet strength and found them to be the same as a new pickup. I re-magnetized both pickups anyway but the sound did not change from either pickup. This experiment exploded the myth that aged magnets were the reason for this massive difference in sound. So I concluded it had to be the coil itself since there is nothing else to explain it. Another well known pickup manufacturer claims weaker magnets are the reason that old pickups sound sweet, but I can not confirm that claim when I deliberately degauss magnets.

To confirm my suspicion about aging of the coil I ran some analytical Q plots on both pickups, see the image below. To obtain absolute conclusive proof I also rewound the second (excessively aged) pickup. It then sounded identical to the first rewound pickup and returned an identical Q plot.

It turns out that Formvar insulation is not age stable, it's an unsophisticated old technology coating that degrades over time, unlike modern Polyurethane coatings which seem to go on forever. Formvar is also sensitive to heat treatment so depending on the length of time spent in, and the temperature of the wax pot at time of manufacture, it took longer to degrade. That's the reason some old Strat pickups aged more severely than others over a similar time span. Those with slight to moderate aging lost some ice-pick brittleness and sound sweeter than examples of new pickups. Those with excessive aging, like the one I repaired, sound so dull and lifeless as to be unusable, something like turning the tone control down to 3.

This displayed (or attached) image clearly of my Q plots shows the difference between the 2 pickups, the black trace is the one we are concerned with. The taller peak represents non-aged sound of the rewound pickup. The lower peak portrays aged sound of the original repaired pickup. Both pickups had identical high-peak plots after rewinding.



So there you have conclusive scientific proof for aging of old Fender pickups, Formvar wire degrades in time. It definitely is not due to aging of magnets.

Until now ALL hum-cancelling Strat pickups with Alnico rod magnets, regardless of brand, delivered Aged Sound to one degree or another. Because I understood the Aged Sound phenomena I have always advertised my pickups correctly as delivering Aged Sound of various degrees, others don't tell you (it seems they don't know about it).

Now back to the Impersonator 54, remember it is the first hum-cancelling Fender type pickup to have non-aged sound. I gave it that name because I designed it to sound similar to Fenders CS-54. See, in January 2009 Hank Marvin asked me to design a hum-cancelling Strat pickup that he could use to achieve his legendary 60's 'Shadows' lead guitar sound. It has taken countless hours over 20 months of intensive research, experimentation and inventive development to achieve the goal. Meanwhile Hank used Fender CS-54 pickups, the closest sounding modern pickup to his 60's sound.

As of today the Impersonator 54 can be ordered as a set of 3, 2 or as a single pickup on my webshop. To learn more about it and see photos of it go >www.kinman.com >Products & Ordering >Stratocaster pickups >Impersonator 54 >Click to view more info.

Click on the photo to clearly see the revolutionary construction of the pickup, the most striking difference being the absence of magnetic shields surrounding the upper coil. Also you will notice the lower bobbin consists of 150 separate individual sections of thin steel plates. Making this patented laminated bobbin is a highly prized secret process and is unique to Kinman. It is the extraordinary electrical performance of this patented bobbin that is key to the sound of the Impersonator 54 because it allowed me to dispense with the usual magnetic shields surrounding the upper coil. Without shields the upper coil is free to generate the explosive, highly transparent sound with great presence that *is* Fender non-aged sound.

Without this 100% steel bobbin the achievements of the Impersonator 54 and the P90 Hx would have been impossible.

It is these two products that reaffirm Kinman as the outstanding and undisputed leader in noiseless technology.

Cheers ….. Chris Kinman.