

## What IS Quack, Anyway???

The tone that is generally referred to as "quack" - the classic Strat 5-way throw #2 and #4 spot tones - is created by a pair (or more) of pups, parallel IN PHASE - NOT out of phase. That "out of phase" rap is a bit of bad info that probably has its roots somewhere back in the same swamp that caused the Strat's vibrato bridge to be called a "tremelo." Ouch! But, that's what Leo called it, so it stuck. Actually, if two pups are out of phase, the combined tone is usually quite thin and nasally - most ears find it downright unpleasant.

There's an old saying:

“The three most important things about a business are location, location, location...”

The specific frequency response (tone) that we have come to call "quack" is what happens to the tone when you play two pickups with the same tonal characteristics mounted in CLOSE PROXIMITY to one another. Actually, it's quite similar to what happens when you play two pickups with one out of phase - not as dramatic, certainly but it is the same principle at work. The "quack" happens as frequencies produced by one pickup are emphasized or cancelled out but the output of the other pickup, leaving a notchy, quirky tone. Change the location of one pickup or the other, and you change the sound/frequencies that pickup produces, and that changes which frequencies are cancelled between the pair - changing the "quack factor."

The classic Strat quack is, I BELIEVE, caused in equal parts by the fact that (A) the pups are close together and (B) the pups are so similar in frequency response and output (the combo of all three Strat pups on, in parallel, also is a nice quack). If you unmatch yer Strat pups - that is, swap **ONE** pup out for something dis-similar - it will have a distinct effect on the quack factor. That's why home-built H-S-S Strats lose some of the sweet quack in throw #4, unless you have a coil-shunt happening (like the Fender Fat Strats have).

Do other guitars quack? Technically, yes... Three-pup Teles will quack in (2) and (4) like a Strat, but the quack will have a have a different character, as the construction and tone of the two pups creating the quack are different.

FURTHER!

Two-pup Teles have a subtle "quack" when the pups are played together, but as the pups are so different and so far apart, we don't perceive it as a classic quack - so, let's call it a "cluck," a term which I have heard several players use. For Teles, there have been a few mods drawn up using a capacitor to filter the output of the neck pickup

while playing the pair out of phase in order to modify the cancellation pattern, attempting to get the two-pup Tele cluck to more closely to replicate the sound of the Strat quack. It creates an interesting tone, but you will have to decide for yourself how close it comes.

With “cluck” for a new definition of parallel tones, it could be said that Gretschs cluck, too - we've all heard it, and I think the cluck of a pair of Gretsch single-coils pretty much defines rock-a-billy tone.

Gibsons can cluck, too, especially the P90 axes, but on Les Pauls, SG's and the like, it seems to me that the fatness of humbuckers warm the tone so much (too much fundamental, not enough overtones and harmonics) that some of the character is lost. You can get some of that delicate tone back with coil-shunts or coils-parallel custom wiring options...

So, let us say pickups that are "Strat" distance apart will quack...  
And pickups that are "Tele" distance apart will "cluck."

Now, if this isn't a great argument for owning a bunch of different guitars, I don't know what is!