

Thus, a pickup placed near the end of the neck on the body of the electric guitar will have an output signal which is predominantly associated with the lower-order harmonics of the triangle-shaped standing wave(s) on the guitar string(s), resulting in a more mellow sound, whereas a pickup placed near the bridge on the body of the electric guitar will have an output signal which has higher harmonic content, resulting in a more bright, or brilliant sound output from the guitar.

Obviously, it is also possible to locate a pickup at an transverse displacement *anti-node* or a *node* of a particular harmonic, at least for the open (i.e. unfretted) strings. On Fender Stratocaster and Telecaster guitars, the scale length of the Strat and Tele are both $L_{\text{scale}} = 25\frac{1}{2}"$. The three single-coil pickups on the Strat are located at $19\frac{1}{2}"$ (neck PU), $21\frac{5}{8}"$ (middle PU) and $\sim 23\frac{7}{8}"$ (bridge PU), respectively from the fretboard side of the inner edge of the nut on the neck of this guitar. On the Tele, the two single-coil pickups are located at $19\frac{1}{2}"$ (neck PU) and $\sim 23\frac{7}{8}"$ (bridge PU), respectively. Thus, the neck PU's of the both the Strat and the Tele are located near the 2nd anti-node (from the nut) of the $n = 2$ harmonic, and therefore are simultaneously near the 3rd node (from the nut) of the $n = 4$ harmonic, i.e. both located at $\frac{3}{4} \times 25\frac{1}{2}" = 19\frac{1}{8}"$. The middle PU of the Strat is located near the 3rd anti-node (from the nut) of the $n = 3$ harmonic, and therefore is simultaneously near the 5th node (from the nut) of the $n = 6$ harmonic, i.e. both located at $\frac{5}{6} \times 25\frac{1}{2}" = 21\frac{1}{4}"$. Thus, when playing open strings on the Strat or Tele with the pickup selector switched to the neck pickup, the 2nd harmonic (4th harmonic) will be enhanced (suppressed), respectively. When playing open strings on the middle pickup of the Strat, the 3rd harmonic (6th harmonic) will be enhanced (suppressed), respectively. The bridge PU on the Strat or Tele is not located near any anti-nodes or nodes associated with the low-order harmonics of the open strings.

Note also that the bridge PU on both the Strat and Tele are also slanted with respect to the strings - the bass side of this pickup is farther from the bridge than the treble side of this pickup. There are several reasons for this - primarily for string balance on the output of this pickup - the transverse displacement(s) of the strings go to zero at the bridge saddles, if we neglect the small vibrations of the bridge/guitar body itself; by slanting the pickup, the lower frequencies associated with the strings on the bass side of this bridge pickup are better balanced, output-wise from this pickup, with the higher-frequency signals associated with the strings on the treble side of this pickup. By slanting the pickup in this fashion, the relative phases of the signals from each string are also slightly shifted from each other, which can have interestingly complex auditory consequences when overdriving an amp with a Strat or Tele, and/or using a distortion FX box with either guitar. Another reason for slanting the pickups on an electric guitar is for aesthetic reasons - i.e. style - it looks cool!

On a Gibson Les Paul guitar, the scale length of the Les Paul is $L_{\text{scale}} = 24\frac{1}{2}"$ - $24\frac{3}{4}"$, depending on the year of manufacture. The pickup pole-adjustment screws on the two humbucking-type pickups of the Les Paul guitar are located at $18\frac{5}{8}"$ (neck PU) and at $23\frac{7}{8}"$ (bridge PU), respectively from the fretboard side of the inner edge of the nut on the neck of this guitar. The pole-adjustment screws of the humbucking neck PU of the Les Paul are, like the single-coil neck pickups of the Strat and Tele also located near the 2nd anti-node (from the nut) of the $n = 2$ harmonic, and therefore are simultaneously