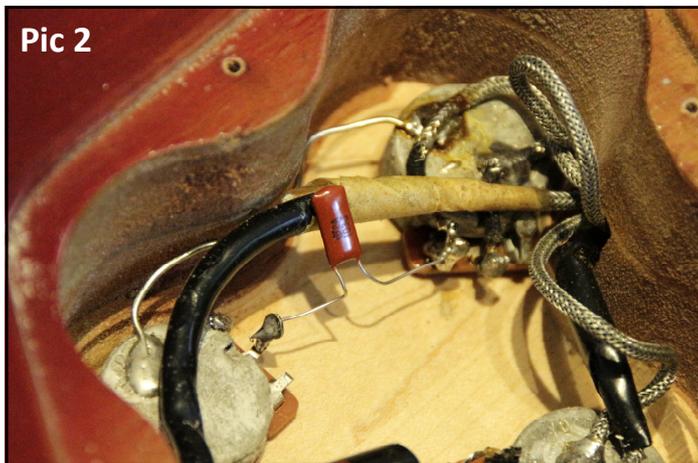


## Guitar tone too ice-picky? Then reduce your tone cap value!



Pic 1

Original factory fitted 0.022uF foil cap.



Pic 2



Pic 3

Ceramic 0.010uF cap fitted by me.

*With this cap mod you will have to practise dialling in some tone control action! But it will enable the cap value to 'work with' the inductance of the pickup to produce a nice singing tonal effect, especially with the 'middle' PU selection. For me, this mod has been ultra special in killing that ice-picky top 'quack' when hitting the top strings hard. It's better than spending fortunes on alternative speakers and pickups!*

**Pic 1** - This guitar is a 1971 Les Paul 'Deluxe'. Quite often, older guitars are fitted with a 0.047uF (also often marked as: 47nF or 473) capacitor for the tone control. But in later years this was changed to 0.022uF (22nF or 223). Most players seem quite happy with this, or don't think to try different smaller values. Here's why you should, perhaps.

**Pic 2** - Personally, I find that electric guitars can be a little 'ice-picky' when both controls are at max. However, turning the tone control down a little to remove some top end can result in the tone becoming quite muddy very quickly. This is because the tone's capacitor value is just too big for this purpose. So I changed mine to a 0.01uF (10nF or 103). You can even go smaller if you want... say 0.0047uF (4n7, 4700pF or 472).

**Pic 3** - The smaller value provides a better controlled range of subtle tone variation, which for me really works well. You could simply replace the cap on the treble pickup tone control so, for the middle sound, you'd have the choice of 0.022uF cap or the smaller 0.01uF cap for comparison on the two tone controls.

So, set your Tone to say 5 and experience a sweeter singing tonal change without everything going mushy! The lower cap value alters the PU's upper peak frequency downward... removing the HF brittleness!

**Tone Capacitor Types** - It looks like I'm always opposing what is popular belief in the guitar and amp world... but I am a formally trained and qualified electronics techie & designer. So I think I'm entitled to speak out when things said are just plain wrong!

It's a long forgotten fact that wound 'foil' caps are not best for electric guitar tone control use. Back in the nineteen fifties it was discovered that their internal inductance is in parallel with the cap's own capacitance. This creates a resonant frequency which can coincide with certain radio stations around the world. So their use might cause spurious pickup of odd shortwave radio stations!

I fail to understand the current 'fashion' to use 'bumble bee', 'orange drop' or other types of expensive wound caps. Ceramic (cheap) caps DO NOT have an internal inductance and, therefore, do not create this RF problem! TBH, high quality caps are not really required. They are only being used to short high frequencies to ground... so quality is not an issue! However much anyone 'feels' they sound better with expensive caps... sadly, they cannot in this role!