

# Gitarre & Bass

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## Amp Station: Jazz tone

Written by Udo Pippert of Gitarre & Bass  
(transcribed by Irving Blacker of Tonehenge Amplification)



In this issue we are dealing with a subject on which I have received many inquiries in the past. It is about the selection or matching of tube amps for the best possible jazz sound. Amplifying acoustic or semi-hollow-body guitars has always been a huge challenge because most jazz guitarists are very demanding in terms of sound and simultaneously fight against unwanted distortion and feedback. In the following article I would like to summarize some tips and tricks that get great tone and how to avoid distortion.

When I started getting involved with jazz sounds, around 1977, most guitarists in this genre used transistor amplifiers. George Benson played a Polytone, Pat Metheny an acoustic amp with a 4x10" speaker cab and Volker Kriegel and Michael Sagmeister used a Gibson LAB L9 with 15" speakers. Such examples can be found very often from that period. Although all of these guitarists had indeed very good tone, the typical depth and openness of a tube amp sound could not be reached however in its wider spectrum. Still the transistor amps had some advantages over tube amps: They sounded very compact and linear, were less prone to feedback and offered a relatively balanced frequency spectrum and a nice sustain, which was the ideal sound of many jazz guitarists. A Gibson L5 played through a LAB or a Polytone is completely convincing – even today.

One disadvantage that the transistor amps had in particular was its dynamic behaviour, in their relatively poor response and in their tendency to not let the individual character of a particular guitar fully unfold. You could also say: Transistor amps tend to standardise tone.

I do not wish to start a discussion about tube versus transistor because transistor amplifiers will continue to play a rightful role in jazz. It is more about ways to show how one can get the typical warm jazz tone with a tube amp without all the disadvantages.

Above all I am thinking of the sounds of the early sixties, which were marked by numerous jazz guitarists including: Wes Montgomery, Kenny Burrell, the early George Benson, Herb Ellis, Joe Pass, Barney Kessel, Grant Green and Jim Hall. All of these guitarists were playing tube amps on their early recordings and getting fantastic sounds. Today tube amps are celebrating a renaissance with jazz guitarists.

Let us first take look at the most popular models from the distant past. In the fifties the combos from Fender (Tweed), Gibson, Standel or Flot-A-Tone were especially loved by jazz musicians due to their sound and their small size. These amplifiers were sufficient for jazz guitarists because they were usually accompanying musicians and they performed as a soloist only in rare cases. They often stayed in the background and did not play very loud.

Even back then, most jazz guitars were equipped with a tone control that made it possible to filter out unwanted peaks and thus to form the typical dark jazz sound. But soon the guitar became a solo instrument. Just think of the impressive sound of a cascading Les Paul, who at that time had good reason to play on a solid body. The traditional jazz players remained with their hollow bodies and now had to fight

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against all the disadvantages of the electrification of their sounds. Recently I read in a retrospective of Wes Montgomery that he alleged that during his entire career he was unhappy with his sound because he simply could not find the perfect amp. One might even go so far and assume that the dark jazz sound is actually created only (and eventually cultivated) because the amount of unpleasant highs tube amplifiers have, are rather imperfect sounding and also quickly led to feedback. Most guitarists wanted more of a linear and natural reproduction of their beautiful instruments that already sounded great acoustically.

Let's now take a look in the interior of a tube amp and consider certain circuit characteristics which can be modified for a better jazz tone. The objectives of these measures are the reduction of distortion and the high frequencies, improving the mid-range and increasing the linearity of the sound.

First, a list of known suitable amplifiers for conversion to a "jazz box": Fender Tweed Fender amps from 1956 and Brownface, Blackface and Silverface combos. Examples from this list shall be explored in following issues.

Let's start with a Tweed Deluxe amp replica from Cream which I have converted for jazz sounds. These amps are known for their distortion when left stock and therefore not ideal for a clear jazz tone. But they are very small and handy and with around 15 watts of power ideal for use in a club. In addition, these amplifiers are connected with a so-called "split-load" phase inverter which is appropriate for our purposes because of its low gain. The only drawback is the two coupled volume pots, which restrict the volume control range on the one hand and deliver too much gain in the preamp. The aim is to reduce the gain in the preamp and increase the output power and stability of the amplifier. Only then we get enough headroom for a clear sound.

Just this once, I should like to "put the cart before the horse" because there are a number of measures to improve the amp without intervention on the circuit.

First, these amplifiers usually have an inefficient speaker. Powerful speakers with a good efficiency rating are especially suitable for jazz sounds. Those who love the Alnico sound can search out an old JBL D-120 and replace the aluminum dust cap with a counterpart out of fabric (available from Weber VST). The speaker can be helped dramatically in the highs and we get a warmer, rounder tone. Excellent was also the old Fane Crescendo Heavy-duty speaker, which is also suitable after the removal of the aluminum dome making a perfectly clear and powerful sound. These speakers were also used by David Gilmour. Another excellent choice is also an Electro-Voice 12L or a Jensen C12K with 100 watts. All these speakers better the sound of the Tweed Deluxe significantly. You only have to watch out for the thin baffle-board because vibration during transport could for example pull heavy speakers from the screw holes.

A further stabilizing method is the conversion of the power tubes to 6L6 or 5881, which I recommended at this point

several times. Although the amp has only about one or two watts more output, the increase in headroom is very clear. You get more clean reserves and dynamics. Here I recommend changing the cathode resistor of the amplifier from 250 (typically with 5 watts) to 330 ohms with 10 watts. If you play a jazz guitar with humbuckers, we recommend the low input of the normal channels. Here there are less highs and the output signal of the guitar is more attenuated. It should be noted that the volume pots affect each other on the Tweed Deluxe. By turning the unused channel by not more than 70 percent, the tone is much cleaner, but also quieter.

If you don't wish to utilize this trick, you can simply remove the cathode of the second stage capacitor (Elko 25 $\mu$ F/25 volts) and reduce the gain of this stage substantially, which in turn increases headroom. The amp will be clearer and somewhat linear, but also a touch softer.

Even more clear sound can be obtained by replacing the output transformer. Something I always do in such tuning. In this case I choose a **Mercury Magnetics Tweed Pro Axiom FTPRO-O transformer** (available at **Tonehenge Amplification**) with 8 ohms, which gives much more stability to a small tweed amp.

If you want to use the amp only for jazz, you can also decouple the two volume controls from each other and only one channel and a tone control remain. Now you can adjust the volume much finer and linear. The circuit can be found at [www.schematichaven.com](http://www.schematichaven.com) under Fender Deluxe 6G3. Here the channels are completely separate, each with their own volume and tone control. It's only after the volume knobs on the channels that two 220k ohm mixing resistors are mixed together again.

Since the Tweed Deluxe played with humbuckers has in general somewhat bassy sounds, I also reduce the value of the coupling capacitors from 0.1 $\mu$ F to 0.022 $\mu$ F. This makes the sound tighter and more mids. Sprague "Orange Drop" P715-type fit perfectly here.

Finally we get to fine-tuning via preamp tube placement. With a good 12AY7 and a 12AX7 of your choice, you can continue to shape your favourite tone. For those of you who have not had enough, you can play with the value of the capacitor on the tonepot. The Deluxe was originally installed with a 0005 UF capacitor but also possible are values such as 0.01 $\mu$ F or 0.02 $\mu$ F (as in the 6G3) for a slightly warmer tone. If you want to darken the sound one can bridge one of the anode resistors at the 12AY7 with a 0.003 $\mu$ F capacitor (as in the normal channel of the Brown Vibrolux).

The result is a truly compelling jazz amp for small clubs, feeds back less, offers more clean reserves and could compete with any Polytone but all the benefits of dynamic and harmonically rich tube sound can be enjoyed. Diana Krall's guitarist Anthony Wilson often used a Tweed Deluxe replica from Clark and his blond Gibson Byrdland in the studio. This sound is very reminiscent of Kenny Burrell and offers a wonderfully unique character. Have fun experimenting!

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(818) 998-7791