

Righteous Tubes!

To vote for *your* favorite combination of tubes, please click the following link to go to my original web site at GeoCities:

<http://www.geocities.com/BourbonStreet/Delta/3281/index.htm> [R.I.P.]

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February 28, 1998

Manufacturer/Style	Application	Notes
Sovtek 12AX7WB	Preamp ***	High gain, low microphonics with a warm, smooth bluesy tone. (MG)
Sovtek 12AX7WXT+ [NLA]	Preamp ****	More gain than WB, a bit more boost on low end. (MG)
EI 12AX7 (Yugoslavia)	Preamp ****	Similar to 12AX7WXT+ but with a warmer, sweeter tone. (DT) Definitely an acquired taste that you may not like at first (or later) (SA)
Golden Dragon 12AT7 [NLA]	Driver ****	Clean, high end audiophile tubes. well balanced and perfect for driver...
Golden Dragon 12AX7 [NLA]	Driver ****	... or clean channel. Chinese. (MG)
Ruby Tubes 7025STR [NLA]	Driver ***	Chinese tube. Similar to Golden Dragon but not quite as nice. (SA)
GE JAN 12AX7WA (NOS) [NLA]	Driver *****	Very clean driver tube. Not as bright or loud as Golden Dragon. (SA)
Mesa STR 12AX7A	Preamp *	These tubes are high gain with much distortion. Dark sounding with not much definition in Fender-style amps. (SA)
Mesa SPAX7	Preamp **	Select version of above (includes band of tubing to reduce microphonics). It does work great as V1 for Marshall JTM312. (SA)
		DT- from Dan Torres' catalogs and articles MG- from Matt Griblin's catalogs SA- my own opinions

May 31, 1998

I haven't updated this page at all for 4 months frankly because I decided that my original premise mainly applies to certain amps, like the Peavy Classic amps and other modern amps that share tubes between both "channels".

I've gotten quite a lot of feedback on this page in particular and would like to answer a few questions that have

been raised. For starters, I haven't rated output tubes at all simply because it can get quite expensive buying several sets of matched EL84 quartets or 6L6GC pairs just to compare them. I also think that setting the bias for your output tubes properly can be as important as the actual quality of the tubes, and unless your amp has a bias adjustment you might be better off sticking with the stock tubes.

Another point raised in a few messages is that traditional wisdom generally dictates that lower gain tubes be used in the initial preamp stages and the higher gain tubes be used in the subsequent stages (which will result in less overall noise). My advice on this page mainly applies to the modern "two-channel" amps which are really a single channel amp with added gain stages for the OD "channel" (or mode, to be exact). A typical amp of this design will use V1 for both "channels" and then add in the two stages of V2 between V1A and V1B for the OD "channel". With this arrangement I think you need a strong tube for V1 so that you get decent gain from the Normal channel. I think many of the modern amps go overboard with the overdrive gain, and by using a lower gain 12AX7 for V2 it mellows out the OD sound a bit. With these amps, V3 is the driver, and I'd recommend using the most powerful but clean 12AX7 you can find; if the two stages of this tube aren't well-matched it can make any amp sound lousy. I view the driver tube as being the "window" between the preamp section and the power amp section, and if the tube is relatively "transparent" it will allow the full sound of the preamp to pass through to the output tubes.

One other thing I've noticed since starting this page is that practically any amp design can be fine-tuned to work well with almost any combinations of tubes, at least as long as there is some consistency between those tubes. I was surprised to learn that the Pignose G40V tube amp was able to get some really nice sounds from the generic Chinese 12AX7 tubes that sound terrible in other amps. If the designers are aware of the characteristics of the tubes to be used in the final production they can fine-tune the gain stages accordingly. So if your amp is designed for a dark sounding 12AX7 like a Mesa Boogie SPAX7, it may become overly bright if you replace them with Sovtek 12AX7WXT+'s.

Let me know which tubes work best for your amp(s) by voting in my "tube poll" referenced above and I'll try to put together a chart of your recommendations.

January 31, 1998

In retubing my Marshall JTM312 today, I found that the Mesa SPAX7 works **great** as V1 along with a nice driver tube for V3 like the Golden Dragon 12AX7. I left the original Marshall ECC83 in for V2. One thing I noticed was that the tubes that sound great in my Peavy and Fender amps really don't sound that good in the Marshall. In designing an amp, the gain stages can be tuned to get a certain sound with a certain tube, and a tube with totally different characteristics can alter the sound enough that the amp loses its positive qualities.

I've gotten a lot of e-mail concerning other tubes that work great in specific amps, and have decided to add a page with a form to "vote" for your favorite tube combinations.

January 3, 1998

It seems like every week I discover a new tube that works as well or even better than my previous favorite. So I decided to post a chart of preamp tubes at the top of this page. The "Notes" column is basically from Matt Griblin (MG) or Dan Torres (DT), and the ratings (*****) are my own biased opinions.

Well, another company that makes nice preamp tubes is Elektronska Industrija (EI) from Yugoslavia (now

Bosnia). This company has been manufacturing tubes for many years, and supplies Groove Tubes with their 12AX7/7025 tubes. The 12AX7 makes a really nice initial preamp tube that is a little bit "sweeter" than the Sovtek 12AX7WXT+. It also works well as the second preamp tube (it's a bit warmer than the Sovtek 12AX7WB). With the EI 12AX7 as the initial preamp tube, you can use the Sovtek 12AX7WB as the second preamp tube for a warm OD sound, or a Sovtek 12AX7WXT+ for a hotter OD sound. According to Dan Torres, Sovtek is in the process of phasing out the 12AX7WA's & WB's and they will be manufacturing only WXT+'s. This move may be cost-effective for Sovtek, but it reduces the tonal choices offered to the customer by 2/3rds. The Chinese manufacturers will evidently be doing the same thing so in a few years there will be a lot fewer types of tubes for guitarists to choose from.

Torres was out of Golden Dragon 12AX7's so they recommended a NOS driver tube: a GE JAN 12AX7WA from 1986 for \$18 (ouch!). This is a very clean tube and works great as a driver. The Golden Dragons are brighter and have a little bit more gain, but the NOS GE produces a stronger tone.

December 22, 1997

The best combination of 12AX7-family preamp tubes I've found so far is this:

- Sovtek 12AX7WXT+ for the initial gain stage of each channel. This tube has the warmth and fullness of a vintage Telefunken. Works great for clean and overdrive channels (with the clean channel you don't have the crisp clarity of a 5751, but the tone is much warmer).
- Sovtek 12AX7WB for additional preamp gain stages. Not quite as much gain as the WXT+ but I think it works great when driven by the signal from the initial gain stage and doesn't muddy up the sound too much.
- Golden Dragon 12AX7/ECC83 (or 12AT7/ECC81) for the driver stage. I prefer to have a fairly transparent tube in the driver socket which doesn't mask the tonality of the preamp stages. I had been using the cheap Chinese 12AX7's which came with my Peavy Classic 30 (which worked better than anything else I tried) but that was before I tried the Golden Dragon tubes. The Ruby Tubes 7025STR also works well as a 12AX7-type driver tube and is a lot easier to find. (Torres Engineering sells the Golden Dragon tubes for \$13.95 each (650)-571-6887. Griblin Engineering sells them for \$12.95 each (800) 605-2677)

I've tried this "magical" combination of preamp tubes in 3 of my amps, all with the same results: it makes them sound better than I ever thought they could. With a Peavy Classic 30, it gets rid of the harshness from the cheap Chinese 12AX7's. With a Marshall JTM312, the clean channel sounds a lot brighter and the overdrive channel has a warmer sound with much more definition (with the stock tubes, the amp's sound was a bit muddy).

With my '65 Pro Reverb modded with a customized Torres SuperTexan kit, it added a lot of definition to the overdrive channel and mellowed out the clean channel a bit. I was NEVER satisfied with the stock sound of this amp ever since I got it 25 years ago; it was ok if I ran a distortion or other fx pedal before the input, although you could get some decent rhythm sounds out of it. I had tried changing tubes at random with no great improvement in tone and eventually butchered it up with a bunch of magazine projects and custom mods in an attempt to make it sound like a Boogie. After moving it from closet to garage to closet for almost 15 years, I finally decided to try to resurrect it with a new circuit board and design from Torres. Although I was pleased with the ST design, the amp did not really sing until I put in this magical combination of tubes- which makes me wonder: maybe all it ever needed was the right combination of tubes...

I should point out my particular biases in regard to guitar tones. I think Albert King's recordings from the 60's

represent the ULTIMATE for blues guitar tones (altho SRV really captured that vibe on Texas Flood). I always liked the clean blues guitar sound of Mike Bloomfield and Peter Green, and the nastier blues sounds of Eric Clapton and Freddy King. Carlos Santana's band was originally called the Santana Blues Band; the Latin and jazz influences he brought to rock music was very influential, and his smooth, "endless sustain" tones have been copied but never equalled or surpassed. Stevie Ray Vaughan almost single-handedly brought the blues back into popular rock music in the mid-80's, and his blend of Albert King and Jimi Hendrix riffs has set the standard to which all modern blues/rock guitarists are compared.

The tube amp sounds I look for are a smoothness and definition in the overdrive channel, and a warmth and clarity in the clean channel. (This is for LEAD guitar- I've never been much of a rhythm guitarist.) If you like a lot of distortion, you can try Sovtek 12AX7WXT+'s for all of the preamp tubes. If you want a crystal clear sound from the clean channel, try a 5751 for the initial preamp tube.

Steve Ahola

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Update: May 31, 2003

Many of the tubes I recommended 5 years ago are no longer available. Those GE JAN 12AX7WA tubes were really nice but the supply of them dried up a few years ago. The only NOS 12AX7's around at a decent price are the ones from Phillips and I'm not impressed with them at all- a very boring tube which adds very little character to your amp. I have used some of them for non-critical applications where a neutral tube will work.

Sovtek is still making their 12AX7WA's and 12AX7WB's. I've never liked their WA's at all, but the WB's are great for mellowing out an overdrive channel since they seem to have less gain than the premium Sovtek 12AX7's, which come in a few different styles and with a few different names. The 12AX7LPS is a great tube and I believe that they have been making it with long plates and short plates. Sovtek also sells tubes under the Electro-Harmonix name. Except for the WA's I like all of the Sovtek 12AX7 tubes.

My favorite tubes these days are used old stock Mullards and Telefunks that I've been able to pick up at a fraction of the NOS price. Make sure that the tube seller actually tests the premium tubes and will allow you to exchange any tube that proves to be defective within a reasonable period of time (like 14 to 30 days). These used tubes all seem to have their own unique character and IMHO are much more 3-dimensional than current production tubes.

Update: December 7, 2005

The new tube everybody is talking about is the GT-12AX7-M from Groove Tubes, with the "M" standing for Mullard (it is advertised as a reissue of the original Mullard 12AX7/ECC83 dual triode preamp tube). Groove Tubes also markets the Sovtek 12AX7LPS(short plate) as its GT-12AX7-R and the long plate version of that as the GT-12AX7-R2. It also markets the EI 12AX7 as its GT-7025-Y. I believe that the GT-ECC83-S is from JJ / Tesla in the Slovak Republic; I'm not a big fan of this tube but many people are. In an overdrive channel I think that it gives an amp a very smooth and creamy sound

If you can find these tubes from the original manufacturers they will be a lot cheaper than the ones relabeled by Groove Tubes. Be sure to test them out right away because you can usually return preamp tubes within 30 days if they are defective out of the box.

It has been suggested that the EI 12AX7's sound similar to Mullards, while the Sovtek 12AX7LPS's sound similar to Telefunks. I agree with that to the extent that there is a "family resemblance" between them, but the originals have a fuller, more 3 dimensional sound to them.

FWIW I keep running across the Sovtek 12AX7WA's as original equipment in cheap amps (like the Epiphone Electar Tube 30). I still dislike this tube, and will replace it at the earliest opportunity. One recommendation which has not changed is the 12AX7WB; I like to use it in many of my amps as a lower gain 12AX7 to keep the gain down for overdrive channels.