Vox AD60VTX Modeling Amp

I've been saying for a number of years now that modeling amps have come a long way and should not be disparaged as much as they often are by "tube snobs" (of which I am probably one). Modern modeling amps haven't yet made good tube amps obsolete, but on the other hand modeling amps certainly fulfill a very useful and, for some, essential role.

When I recently found myself needing an extremely versatile "grab and go" combo it was only appropriate that I put my money where my mouth is. I needed to be able to grab the amp in one hand, my guitar case in the other, and be ready to go. With both back and heart problems it was important that the amp not weigh as much as a subcompact car. For example, the new Vox AC30CC2X 2X12 combo is a good amp and fairly versatile, but at seventy-seven pounds there is no way I should be lifting it in and out of the SUV and lugging it up and down stairs!

After a lot of research I finally settled on the Vox AD60VTX "Valvetronix" amp about a month ago. The AD60VTX and AD120VTX (stereo) amps and their VTH (head) siblings are handsome, solid amps; unlike the other amps in the Valvetronix series that seem to be an attempt to epitomize the "cheap solid-state look." Of course, with a price tag more than double that of an AD50VT, the AD60VTX had better have beauty that goes more than skin deep! The VTX amps earn their lofty (compared to other Valvetronix amps) price with several design and construction differences that, in my opinion, take the Valvetronix line from the ranks of entry-level "make do" amps to the realm of professional gig-worthy equipment.

I haven't spent much time using the high-gain models of this amplifier because, frankly, I haven't spent enough time with real examples of those amps to make a meaningful comparison. I'm just not a high-gain kind of guy. In fact, I usually end up substituting at least one 12AT7 for a 12AX7 in my tube amps to lower gain and give me a wider sweet spot. I have spent a lot of time with the "British 70's," "British Blues," and the "Fenderish" models. When I make general statements about the fidelity of the modeling it's experience with those models that I'm basing the remarks on though I expect that the high-gain models are probably of similar fidelity to the original.

If I had to sum up my opinion of the AD60VTX in one sentence it would be this, "A premium specimen of a tube amp is capable of better tone than the AD60VTX, but the AD60VTX is easily as good as more humble samples of the tube amp being modeled."

What, exactly, does that mean in English, you ask? There is a great deal of variation from sample to sample in any production tube amp. Even good production amps tend to use many components with wide tolerances and manufacturers can't afford to hand select components, notably capacitors and tubes. When one starts talking about vintage amps the variation is even greater. Vintage hand wired amps had a lot more room for variation during construction, and even if two amps came off the assembly line sounding pretty similar it's a good bet that the last forty years have aged the two amps differently.

Most tube amps have the **potential** to sound fantastic. When we think of "tube amp tone" we think of amps we've used or heard that were the cream of the crop and, at least in the case of recordings by guitar heroes, had been tweaked by experts. The AD60VTX can't hold a candle to an amp like that, but neither can a tube amp that your average working slob is likely to own. Against many of the tube amps most people can afford the AD60VTX can hold its own not just tonally, but in terms of how it responds to picking dynamics and so on. In fact, the two things that impressed me the most about this amp were how "tube like" the amp feels (possibly due to the 12AX7 push-pull "valve reactor" circuit) and how well the models responded to controls like the real thing (with one exception noted below). In fact, if you are one of those people who have not mastered the sometimes-esoteric skill of tweaking a tube amp with a TMB tone stack you won't have any better luck with the AD60VTX!

This is going to be a long review so let me make one important point for those with short attention spans. The user's manual stresses several times that best tone is achieved by leaving the Master Volume turned all the way up. Believe it! This is true also for tube amps but the difference between the AD60VTX and a tube amp is that you can actually crank the AD60VTX master volume all the way even in a small bedroom without damaging your hearing. There is a switch on the back of the unit that lets you select 1, 15, 30, or 60 watts maximum power from the final solid state amplifier section that follows the "valve reactor." At very low bedroom levels, I honestly think that this amp sounds better than a real tube amp into an attenuator. Even at one watt some of the models are loud, but turn that solid-state power switch down and crank the master! If you fail to follow this advice, you will not be impressed with the AD60VTX. 'Nuff said!

So, you ask, what exactly is a Vox AD60VTX? Well, this is a case where a picture or two should be worth about ten thousand words, so have a glance at the block diagram below (note, this is a functional diagram from a user's point of view – I expect that all of the digital effects and preamp modeling are being done in a single processor).

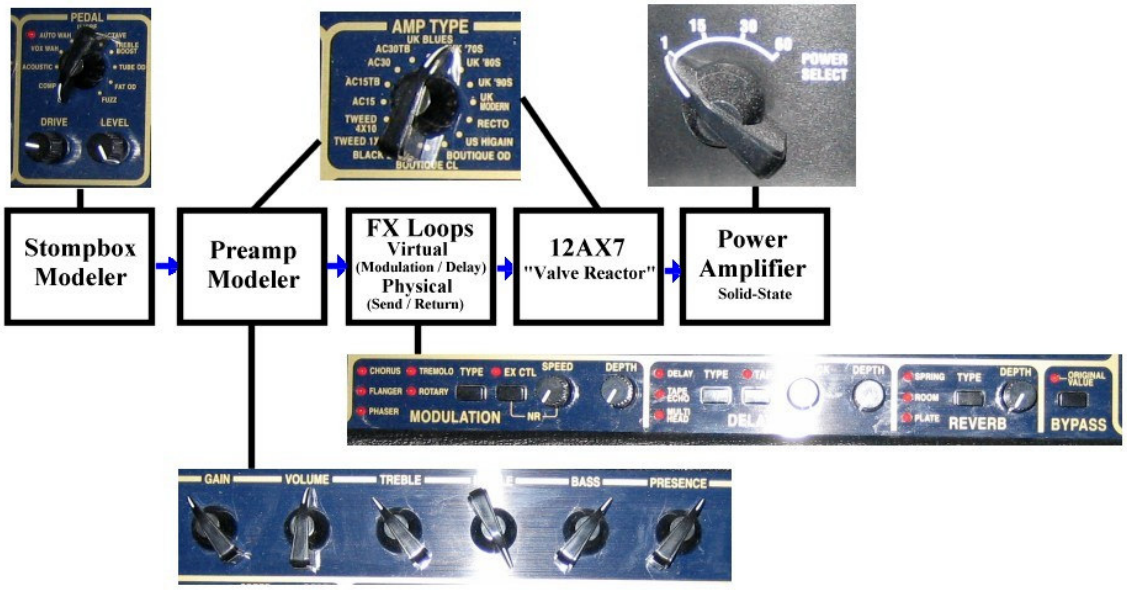

Figure One – AD60VTX Functional Block Diagram

Notice the first two blocks, the stomp box model and preamp model blocks. Understanding how this "front end" differs from an analog tube amp is essential to getting the most out of any modeling amp. Some of the first effects pedals ever created were "overdrive" pedals which were initially intended merely to push the first triode of the preamp into overdrive.

All modeling devices I've tested, including this offering from Vox, have one fairly serious deficiency – at least it's serious if you habitually use an overdrive pedal or other device **to push the first triode of the amp into overdrive**. Engineers routinely overlook the importance of modeling the response of the first triode stage to a strong input signal. When one uses an overdrive pedal or other active circuitry to drive the input of the amp with a strong **clean** signal the amp should model the distortion of the first triode even with the gain turned down very low so that the rest of the amp is clean. I.e. the signal should not "clean up" when the gain is turned almost all the way down because in real amps the gain pot is after the first triode stage. I didn't have time and space to tear the amp down and scope it but this amp audibly fails this test (as does every other modeler I've tested).

The most important thing to remember when using a modeling amp is that providing an <u>extremely strong</u> signal to the input won't improve your tone and may even drive the amp into very nasty digital clipping.

Figure Two – Stomp Box Selection

The first block in our functional diagram is the stomp box modeler. Ten popular pedals are modeled and they are given generic non-infringing names. One selects the desired stomp box with the large rotary knob. The two smaller knobs adjust parameters for the pedals (the owner's manual explains what each knob does for each model).

Built-in modeled effects are very convenient and have some very distinct advantages but even so I am not a big fan of them. In fact I am not a big fan of any digital multi-effects units. The advantages of digital effects are that they are economical, convenient, and quiet. Unfortunately, most of them don't have the "life" of the analog effects they are meant to replace. At least the stomp box modeler in this amp avoids one common problem afflicting most multi-effects units – only one at a time may be selected so one needn't worry about overdoing it by adding "a little of this, a bit of that, and some of the other thing" as so often happens with digital multi-effects.

Please note that while I am not a big fan of the AD60VTX's stomp box models it's not because they are particularly bad models. Some of them are actually pretty good – certainly on a par with the modeled effects found in other units. If the built-in effects let you cover a number you otherwise wouldn't be able to cover they're certainly worth having around. On the other hand, if you have a particular effect that you use a lot and really like, you may be happiest using an original analog pedal for that effect. The exception is if you commonly use an overdrive or booster pedal **to overdrive the first triode stage of an amplifier** as mentioned a few paragraphs back. This scenario simply doesn't work well with the current generation of modeling devices so in that case you **might** actually be better off using a built-in overdrive effect. Of course, if you are using an external overdrive pedal primarily for its own distortion characteristics (i.e. with the gain turned up high) then it will work pretty much the same with this amp as with any other.

Figure Three – Amp Selection

The amp model selector controls two parts of the amp simultaneously – it selects the digital preamp model and configures the "valve reactor" output section for the specified amp. Generic non-trademark infringing names are used for the various amps but you can figure most of them out from the descriptions in the user's manual.

Figure Four – Preamp Controls

One of the things I really love about this amp is that it works like an amp. So many modeling devices have one or two knobs and then a bunch of scrolling menus. If I'm in the middle of a number and I need a bit more gain or need to roll back the treble a bit I can't stop and fool with all that. With the AD60VTX I don't have to. Even if I started with a stored preset I can modify any individual parameter merely by twisting the appropriate knob – just as I would on the real amp – without affecting the other settings established by the preset.

Figure four shows that this amp comes with a complete set of good old-fashioned analog knobs for all of the gain and EQ controls. Furthermore, they work almost exactly the same way they do on the amp being modeled. The exception to this is the Gain control. As noted a few paragraphs back the Gain control behaves more as if it were between the input and the first triode, instead of after the first triode. The user's manual describes which controls are implemented for each model – controls that weren't used on the original amp can be set to neutral or used to further tailor the tone. The Master Volume should always be cranked, even on amps that did not have a Master Volume control.

Judging from the emulation of the amps I've actually used I think the preamp modeling section is very, very accurate. I can't say that it's the most accurate on the market because I haven't had the luxury of trying everything in the latest generation of modeling devices. I can say it beats anything I've used, and that includes most of the previous generation of modeling devices.

While the models seem very faithful as far as they go I do have a minor complaint – in some cases better selection could have been made regarding what to model. The "British Blues" and "British 70s" models are prime examples. Vox engineers chose to model only the bright section

of the preamp. It would seem to me to have made much, much more sense to model both sections of the preamp (using the Gain knob for the bright gain and the Volume knob for the normal gain). The knobs were available and everybody knows that some of the best plexi tones ever produced were achieved by jumpering the bright and normal inputs. As much as I like my AD60VTX, I am keeping my fingers crossed that Vox will consider a firmware upgrade in the future that will implement this improvement. Of course, that assumes that the firmware can be upgraded and I haven't opened the amp yet to see if that is feasible.

Figure Five – The FX Loops

The virtual effects loop is one of the nicest touches on the amp. It puts the time-based effects (delay and reverb) and modulation effects after the EQ and overdrive of the preamp. The most "natural" place for these effects is post EQ and distortion, so this makes a lot of sense. On the other hand, I think it might have been even better had they carried this one step further and put the reverb effects, at least, after the valve reactor section. You can't do that with a real power amp, of course, but in this modeling amp placing the reverb between the valve reactor and the solid-state power booster probably would have given an even more natural sound. Of course, as a practical matter placing any effects after the valve reactor would probably have required another A/D conversion and possibly even another processor chip.

The reverbs and delays are quite good. Time based effects are easy to model and this is one area where digital effects do a fine job, perhaps even better than a spring reverb. Of course, you can't kick the amp and get a "doing" out of a digital reverb!

The digital modulation effects on the other hand aren't anything to write home about though they are occasionally useful. Perhaps it's just that I'm not a big fan of any of the modulation effects types provided, but I don't find myself using any of these except an occasional hint of chorus.

The amp also has a physical effects loop, something I consider essential on any "gig worthy" amp. The effects loop is placed between the virtual effects loop and the valve reactor, exactly where you would expect it but not necessarily the best place for it. Since it probably isn't practical to provide another A/D section and processor to move the built-in reverb effects after the valve reactor, it would seem to make a lot of sense to put the physical effects loop between the valve reactor and the solid-state power amp. This way you could have true post-overdrive reverb, for example. Granted, you aren't able to use a "real" tube amp this way – but this is one case where a little forethought might have made the AD60VTX better than a tube amp!

Figure Six – The Power Amp

After the Valve Reactor (which is configured by the amp selector and has no other external controls) comes the real power amp, a simple solid-state power booster. Solid-state circuitry is very good at faithfully amplifying a signal and that is exactly what this part of the amp does – it simply drives the speaker with a bigger copy of the signal coming off the Valve Reactor. The 12AX7 tube in the valve reactor would barely be capable of driving headphones well, let alone a speaker of meaningful size.

The power selector switch allows you to select 1, 15, 30, or 60 watts as the maximum power delivered to the speakers. Because of the way solid state circuits work this is a true "master volume." That is, the power level chosen makes very, very little difference other than amplitude in the output. Yes, speaker characteristics do change slightly at higher drive levels but that difference doesn't get reflected back into the amp as significantly as it does in a tube amp. What this means in layman's terms is that the amp sounds about as good with the power output set at one watt as it does with the power set at sixty watts. In short, the 12AX7 in the Valve Reactor has already made the contribution to tone (compression and overdrive) expected from the power section of a cranked all-tube amplifier so all that remains for the solid-state power amplifier of the AD60VTX to do is provide enough power to drive the speaker.

You can plug in a four- or eight-ohm extension cabinet, and when you do you need to change the impedance selector to sixteen ohms. When an extension cabinet is plugged in the internal speaker is not disabled. Instead, the extension speaker is placed in series with the internal speaker, so about half of the power gets delivered to each speaker. You can use a four- or eight-ohm extension cabinet but not a sixteen-ohm cabinet. This seemed pretty straightforward to me but apparently it caused a lot of confusion for some because Vox is packing an addendum to the manual just to explain this point.

By the way, my music room at home is quite small so I use a Weber Mini MASS attenuator set to eight ohms and plugged in to the extension speaker jack for the slight drop in output volume that gives me. (The MASS is turned all the way down so it acts like a dummy eight-ohm load). It has very little effect on tone and I am able to run the Master Volume wide open with the power selector set to one watt without deafening myself.

Figure 7 – All This and Programmable Too

The AD60VTX can store thirty-two presets at a time in eight banks of four. And the presets really work seamlessly – unlike many modeling devices I've tried there is no "dead spot" when switching from one preset to another. The presets can be switched from the amp panel or using an optional foot controller. Two different foot controllers are available now, though the manual mentions only the VC-4. I am planning on ordering a VC-12 because it is considerably more versatile and is purportedly of higher quality than the VC-4.

Thirty-two presets may not sound like much compared to some of the competitor's devices that will store a hundred or more. But, as a practical matter how many of us will ever really use even the full thirty-two presets as anything but novelties? I don't think I've ever used more than five or six at a time. Maybe someone covering a lot of material could make use of more than thirty-two presets, but I have a hard time imagining anyone that would be seriously handicapped by being limited to thirty-two. One of the features of the VC-12 foot controller is that it can store more presets (ninety-six, if I recall correctly). However, be aware that this is really more of an "offline storage" feature. The VC-12 can be used to store presets for upload to the amplifier, but there will still only be thirty-two presets available at a time.

Presets include stomp box selection, amp model selection and preamp settings, and delay and modulation settings. The programming interface is very easy to use. Twist knobs until you get a sound you like, press the "write" button, select where you want to store the preset using the bank and channel buttons, and press the "write" button again. The user's manual for the entire amp is only about thirty pages (excluding descriptions of the stomp box and amp models). Most of that is the typical fluff that no one but the seriously brain-damaged ever needs to read ("use the amp model selection knob to select the amp model…").

So, What Sucks?

I wouldn't say I've found anything about the amp that really sucks, but there are a few areas for improvement and things I would have done differently.

1 - For amps that had normal and bright inputs I would have modeled both inputs, using the Gain knob for the normal input and the Volume knob for the bright input. Some of the best plexi tones, for example, were achieved by jumpering the two inputs so both were used at the same time.

2 – I would like to have seen an additional physical effects loop between the Valve Reactor and the solid-state power amp.

3 – I would rather have the option to run only an external cabinet (i.e. be able to shut off the internal speaker when an external cabinet is in use).

4 – The line output feature would be a **lot** more useful if they had included the ability to turn on and off the cab simulation in the line signal and to mute the power amplifier (speaker) output.

5 – It would have been a nice touch if they'd supplied stickers with charts showing what the parameter knobs do for various effects and stomp boxes. User's manuals invariably get lost and it would be nice to have an instant reference that one could choose to stick on the top panel or back panel of the amp if one wished.