VS.

SHOWDOWN AT THE CLUBHOUSE

AMP-MODELING SOFTWARE AND VINTAGE AMPS GO HEAD-TO-HEAD.

By Mike Levine

Conventional wisdom states that while guitar-amp modelers are good at capturing the essence of the vintage amps they emulate, the actual amp will always sound superior. Naturally, you won't hear that from amp-modeler manufacturers, but you hear it all the time from engineers, producers, and musicians. It's one of those truisms that people in the audio field generally take for granted.

I've been a user of amp modelers (both hardware and software) in my studio for many years. I've used them to record tracks for all sorts of projects, including commercials and albums; in fact, the electric guitar sounds on my own CD were recorded entirely with modelers. I even fooled a "golden ears" engineer colleague of mine who heard my CD and was shocked to find out that no amps had been miked for it.

PHOTOGRAPHY BY GERRY MONTESANO

FIG. 1: The panel (from left to right): Pete Moshay, John Holbrook, Rich Tozzoli, D. James Goodwin, and Paul Orofino.

Still, in my mind I've generally subscribed to the conventional wisdom about amp modelers and assumed that if I had, say, a real Marshall JCM 800, properly miked, the British 800 patch in my amp-modeling software would sound inferior by comparison.

Nevertheless, I've also wondered what would happen if modelers were put head-to-head against the amps they emulate. Would it really be that obvious which is which? Would the real amp always sound superior to the modeler? At an editorial meeting last year, while thinking out loud, I raised the possibility of doing such a test for a feature story, expecting the idea to get rejected because of the logistical challenges it would engender. Much to my surprise, EM editor Gino Robair approved it, saying to me, "Make it happen."

The Planning

As excited as I was about the assignment, the idea of turning it into reality was a bit daunting. First, I needed to find someone in charge of a studio that had a vintage-amp collection who would agree to host the testing. Second, I'd need to assemble a group of qualified experts willing to give up an afternoon to serve as panelists. Third, I'd have to acquire the software from the various manufacturers. Fourth, I'd need to work out a methodology for the test that would allow me to make accurate assessments.

The first hurdle was the studio. I initially tried a studio in Nashville that had been recommended to me, but it was too booked up for the owner to commit to letting us use one of the rooms for a day to do our testing. One day I was talking to Rich Tozzoli, who is a friend of mine and an EM contributor. He suggested I try a studio called the Clubhouse, which is located in Rhinebeck, New York. I had recently been in touch with Paul Antonell, its owner, about getting some quotes for an EM story on reamping. Tozzoli said that the studio had an excellent vintage-amp collection (their amps had been modeled by AudioEase for the guitar-amp portion of its Speakerphone software), so I asked Antonell if we could do the tests at the Clubhouse. He said yes, and we set a date of September 13 for the testing.

Paneling

The next challenge was finding the panelists. With the help of Tozzoli and Antonell, I was able to locate a number of producer-engineer-guitarists with excellent credits who agreed to be on the listening panel (see **Fig. 1**).

The panelists were D. James Goodwin (Thursday, Parliament-Funkadelic, Motion Picture Demise), John Holbrook (B.B. King, the Brian Setzer Orchestra, the Isley Brothers, Fountains of Wayne), Pete Moshay (Hall and Oates, Daryl Hall, Paula Abdul, B.B. King, Barbra Streisand, Fishbone), Paul Orofino (John Petrucci, Blue Oyster Cult, Anthrax), and Tozzoli (Al Di Meola, the Marsalis Family, David Bowie).

All of the panelists had lots of experience recording guitars through vintage amps in commercial-studio environments. Most also had experience with amp modelers, especially the tried-and-true Digidesign Pro Tools HD standby, Line 6 Amp Farm.

How to Do It?

I wanted to include all the modelers on the market that emulate specific vintage amps. Because I needed to be able to switch seamlessly between modelers during the listening tests, and in an attempt to keep some limits on the number of products involved, I decided to stick with software modelers only. That ruled out hardware-based modelers. Considering how vital its PODs are to the modeling field, I felt particularly bad about omitting Line 6. I found out through the company that it was on the verge of releasing POD Farm, a software-only modeler, but it wouldn't be available in time for our testing.

The products I ended up selecting were Digidesign Eleven, IK Multimedia AmpliTube 2 and AmpliTube Jimi Hendrix, Line 6 Amp Farm 3.0, Native Instruments Guitar Rig 3, Peavey ReValver MK III, and Waves GTR3.

I initially considered having a guitarist in the studio to play through the amps and modelers live, but I ultimately chose to record DI examples in advance. Once at the studio, I could instead send these files through the amps using a reamping device and through the modelers within Pro Tools.

Some people will say that using a prerecorded track through a reamper takes away from the natural interaction between guitar and amp live in a room and the loading of the pickups that occurs. That is a valid point for certain types of guitar parts, but the truth of the matter is that plenty of tracks get recorded with the guitarist either in a different room from his or her amp or recorded through a DI to be reamped later. I also felt that using the prerecorded DI track would assure that the performance would be identical when it was pumped through the amp and the modelers. This would level the playing field and remove the possibility that a

FIG. 2: The real things (from left to right): the 1964 Fender Twin Reverb, the 1980 Marshall JCM 800 with 4 5 12 cabinet, and the 1963 Vox AC30 Top Boost.

better performance on a particular pass would influence the panelists as to what sounded best.

I contacted all the software manufacturers to request copies of the software to use for the testing. I was a little concerned that they might balk at being part of a test that could possibly indicate that their products weren't able to duplicate the sound of vintage amps convincingly. However, that was not the case at all. My contacts at the various companies were all quite agreeable to the idea and seemed confident about how their products would fare in the testing.

Methods and Parameters

After doing some research on various product-testing methodologies, I decided that a single, very basic blind test would be the most appropriate—that is, a blind comparison of the same example played through the amp and the modelers, with the panelists voting on which they thought was the real amp. In addition, I would ask the panelists to say which of all the sounds was their favorite for each example.

Particularly tricky was trying to find common amps between the modelers and what was in the Clubhouse's collection. Although the general impression is that all the modeling software emulates the same basic group of vintage amps, it's more complicated than that. The Clubhouse had a couple of amps that most of the modelers did: a Vox AC30 Top Boost and a Marshall JCM 800. The studio had a 1963 version of the AC30 and a 1980 version of the JCM 800, so we were in business with those two.

> The AC30 is an easier amp to emulate than the Twin.

Finding common Fender models, however, was more complicated. The studio had a '69 Bassman, but most of the software packages emulate the '59 Bassman. The circuitry between the '59 and '69 amps is quite different, so I had to rule out using a Bassman. Meanwhile, some of the modelers emulated Deluxe Reverbs, and some Super Reverbs, but the most commonly modeled Fender amp (other than the Bassman) was a Blackface Fender Twin Reverb. Luckily, the studio had such an amp, circa 1964, so that became the third amp in the testing (see **Fig. 2**).

Get with the Programming

Because there were only three amps that had enough matches among the modelers, I decided to do two tests for each amp, using different settings on the amps and modelers for each test. I recorded a short example through a DI that was stylistically appropriate for the particular amp. I used my ESP 400 Series Strat (with Lace Sensor pickups) for most of the examples, but I also borrowed a Les Paul from a friend for a couple of them.

Once the DI recording was done, I tweaked the software models of those amps in my studio, making the basic parameters (such as the amount of gain and the tone settings) of the various modelers' sounds as similar as possible. The one x factor was that I wouldn't have access to the real amps until the day of the testing. Then, I'd have to quickly adjust them so their settings would be similar to those I'd used on the modelers.

As the date of the session got closer, I realized that instead of trying to run the DI tracks through the modelers in real time at the studio, I could bounce the tracks through the modelers in advance, and just bring those files with me to the Clubhouse. This would make it easier for the studio to run the examples back-to-back for the panelists. Because amp modelers tend to be CPU intensive, having four or five of them open simultaneously would have been a major strain on the studio's Mac Pro and Pro Tools HD system. An additional advantage of using the prerecorded examples was that I could include Peavey ReValver, which, at the time of the testing, didn't have an RTAS version and therefore couldn't be run live in Pro Tools without using a VST-to-RTAS wrapper. (Peavey plans to have released an RTAS version of ReValver by the time you read this.)

The Big Day

On the day of the testing, I arrived at the studio around noon. I'd asked the panel to show up at 2 p.m., figuring that two hours of setup time before they arrived would be sufficient to tweak the sounds on the amps and get the

Manufacturer and Studio Contacts

The Clubhouse	clubhouseinc.com
Digidesign	digidesign.com
Fender	fender.com
IK Multimedia	ikmultimedia.com
Line 6	line6.com
Marshall Amps	marshallamps.com
Native Instruments	native-instruments.com
Peavey	peavey.com
Vox Amplification	voxamps.com
Waves	waves.com

audio files and Pro Tools sessions transferred to the studio's computer. I brought session files for the six examples, which contained the audio files bounced from each of the modelers and the unprocessed DI files to be sent through the Reamp (from manufacturer John Cuniberti) to the actual amplifiers.

One thing that took a lot of time was changing my Pro Tools session files to match the output scheme of the studio's Pro Tools interface. Then it was a matter of getting sounds dialed in on the real amplifiers for each of the examples, writing down settings, and making sure that the volume levels of the actual amps matched those of the files from the modelers. I also had to pay attention to the input trim level on the Reamp, because that governed how hard we'd be hitting the amp, which would impact the sound.

We set up the amps in a room called the Library, which sits next to the main live room. The reason we did this was that we didn't want the panelists in the control room to hear even the faintest bit of amp sound bleeding into the control room when the actual amp was being fed from the Reamp.

Despite the able efforts of Clubhouse assistant engineer Eli Walker, the process of setting up took longer than expected (see **Fig. 3**), which meant that the panelists ended up sitting around for an hour waiting. Normally this wouldn't have been a problem. It was a nice day, and they were sitting in the studio's backyard, geeking out with tech talk. Unfortunately, one of the panelists, John Holbrook, had a limited time window, and the delay meant that he couldn't stay for all the tests, which was a shame.

ONLINE BONUS MATERIAL

Let the Testing Begin

We were finally ready to start the listening session at about 3 p.m. The panelists sat in the control room, and I handed out scoring sheets to each of them. They would listen to the various versions that were routed through the studio's Neve console and an EMT Plate reverb. The monitors were Genelec 1031s. For each of the six examples, the panelists would listen to the various versions consecutively. They would have no prior knowledge of which was the real amp and which was a modeler. I asked them to write down which version from each group was the amp and which was their favorite.

Amp: 1964 Blackface Fender Twin Reverb
Modelers: Amp Farm 3.0, AmpliTube Jimi Hendrix, Eleven, and Guitar Rig 3

Twin, example 1, was a clean, rootsy, country-influenced example that was played on the ESP Strat and featured both chords and lead work (see **Web Clip 1**). As the five versions were played, the panelists scribbled down notes (see **Fig. 4**). So which was the real amp? "To me, it's obvious," said Goodwin. "I have a couple of ideas," added Tozzoli. When I revealed the answer, sure enough, Goodwin, Tozzoli, and two of the other three panelists had guessed which was the real Twin. The fifth vote was for the Amp Farm version. "If it's this easy to pick out the amp in all the tests, it's not going to be a very interesting day," I remember thinking.

But as it turned out, I needn't have worried. On Twin, example 2 (see **Web Clip 2**), which was more of a rocking rhythm part (although still fairly clean), only two of the five panelists picked out the version with the real amp. Interestingly, the Amp Farm version got the other three votes. Although Goodwin had guessed the real amp, he said that he also liked the AmpliTube Jimi Hendrix version. So did Orofino: "Nice, very tight sound," he commented. Moshay, the other panelist who had voted for the real amp, liked the Guitar Rig version. "It was good," he said, "although a little flat sounding."

Because of the extra time spent during setup, Holbrook had to leave after the Twin examples. Now the panel was down to four.

Amp: 1963 Vox AC30 Top Boost
Modelers: Amp Farm 3.0, AmpliTube 2, Eleven, GTR3, Guitar Rig 3, and ReValver MK III

For AC30, example 1 (see **Web Clip 3**)—a crunchy, British-style, '70s-like rhythm part that I had recorded with the ESP Strat—only Goodwin guessed the actual amp. The other three panelists each chose different models, which indicates to me that either the AC30 is an easier amp to emulate

FIG. 3: The author (left) and Eli Walker (right) work to get the session configured and the volume levels evened out for the testing.

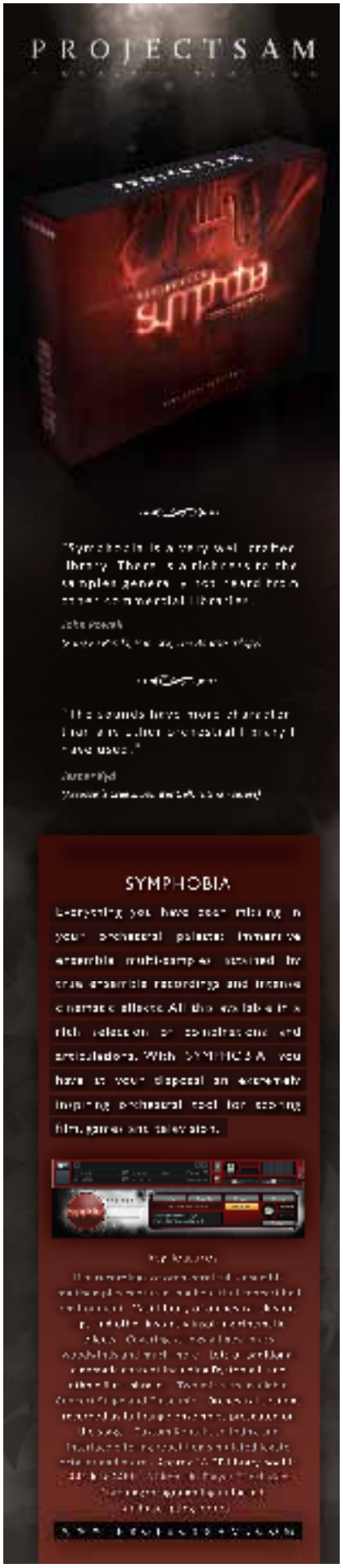
FIG.4:Goodwin,Orofino,andHolbrooktakenotes during the testing session.

than the Twin or a crunchy amp sound is easier to simulate than a clean one. Tozzoli commented that the Guitar Rig version sounded "damn good." Orofino's favorite was ReValver, which he said had more-focused mids. Moshay also liked the ReValver version, as well as the one run through AmpliTube.

AC30, example 2 (see **Web Clip 4**), was another crunchy rhythm-guitar track—this one played on the Les Paul. This time, nobody could tell the real amp from the modelers. Moshay thought that the Waves GTR version was the amp, saying it sounded nice and crunchy. Tozzoli and Orofino guessed it was the Guitar Rig version, while Goodwin thought it was the Eleven version. Interestingly, when voting for which one they liked best (as opposed to which one was the real amp), three panelists chose No. 5, which *was* the real amp. Tozzoli also liked the ReValver version a lot.

This round of listening sparked an interesting discussion. Moshay noted that overall, some of the modeler versions lacked a bit of dimension. "With simulators, a lot of time what happens is that all the time all the tone just comes right to the front; there's no push to the low end," he said. "An amp will have a little push when you're pushing air. It's almost like a multiband [compressor]—we'll just take all the frequencies and flatten them. And they're all like high, mid, low, balanced flat, as if you brickwalled it. Whereas on an amplifier, the bottom end of an amp will push on certain notes and not on other ones; you get a little thrusting going on."

"On the amps, I've noticed consistently that you hear more of the guitar," said Goodwin. "You hear more of the character



of the guitar, whereas the modelers seem to homogenize the character slightly more," he added. Orofino noted that on some of the modeled tracks, there was a compressed sound that was a giveaway.

Amp: 1980 Marshall JCM 800 through a Marshall 4 5 12 cabinet
Modelers: Amp Farm 3.0, AmpliTube 2, Eleven, and Guitar Rig 3

Marshall, example 1 (see **Web Clip 5**), was a heavy passage played on the Les Paul, with both chords and lead, and was intended for a high-gain sound. Two of the four panelists, Moshay and Goodwin, were able to discern the real amp, but notably, none of them chose it as their favorite. Moshay said, "If I were mixing, I'd choose No. 1," which was the Eleven version. Tozzoli liked that one best, too; he thought it was warm sounding. Goodwin and Orofino liked the Guitar Rig rendition best.

On Marshall, example 2 (see **Web Clip 6**), which was played on the Strat, only Tozzoli guessed the real amp. Moshay and Orofino thought it was the Eleven version. Goodwin guessed it was the AmpliTube.

As for favorite sounds, Orofino picked the one played through Eleven, which Goodwin thought was a little more open sounding than the others. Moshay also chose that as his favorite. Tozzoli and Goodwin liked the AmpliTube version best. Thus ended the testing session.

Lessons Learned

In total, the panelists were able to tell the real amp from the modelers only 38.5 percent of the time. Although this wasn't a huge sample, I think it's fairly safe to conclude that given the right conditions, modelers can sound as good as the amps they emulate. The fact that these panelists, who work with amped guitar sounds virtually every day, couldn't distinguish the amps from the modelers in so many instances presents a very strong case in favor of amp modelers.

There were times when the simulated amp sounds were more obvious, especially with the clean-sounding Twin examples. That jibed with my own observations over the years that modelers have a much tougher time getting realistic clean sounds (in the Twin examples, the panelists picked the real amp 60 percent of the time). But on the crunchy and distorted sounds, the modelers were able to fool the experts 75 percent of the time.

If I had it to do over again, I wouldn't have done as much advanced tweaking to the modeled sounds in an attempt to make them sound similar. In some ways, I may have detracted from their sound by doing so. This was especially true for Eleven on the AC30 examples, which I had to program rather hastily on the day of the testing. In retrospect, a better approach might have been to use the modelers' own presets for the various amps being tested, which might have shown off the software's abilities better.

It should be noted that these tests were set up to compare the sound of the amps against that of the modelers, so I have stayed away from drawing any conclusions about which of the modelers sounded best. That would have required a whole different approach to the testing. In fact, all of the modelers in the tests elicited positive responses from the panelists at one time or another during the day. (See **Web Clip 7** for a wrap-up discussion by the panelists about the testing.)

Overall, I was very satisfied with the results of this experiment. Although vintage-amp aficionados might disagree, my take-away from the day was that modelers are not the second-class substitutes for actual amps that they're often portrayed as being. Rather, they're an excellent alternative that can often sound just as good as the amps they emulate. And, of course, modelers give you a choice of many different amp tones and cabinet configurations, are much cheaper (not to mention lighter) than real amps, come with tons of built-in effects, allow you total recall, and often have automatable parameters. Sure, there are times when nothing beats a vintage amp. But according to what I observed in the testing session, that's certainly not a hard-and-fast rule. EM

Mike Levine is the executive editor and senior media producer of EM. He wishes to thank Paul Antonell from the Clubhouse, the panelists, and the software manufacturers. To listen to the same files that the panelists did, and to see if you can guess which sounds are the real amps, see Web Clips 1 through 6.