

That means the bass track which consistently reads -6 dBFS on your DAW meter will look like +12 dB on an analog VU! So when using the *VLA 500* (or many other analog outboard pieces) as an insert processor with Pro Tools, I find it useful to instantiate a trim plug-in before the analog insert, so that I can lower my DAW track's insert level to a level the *VLA 500* can optimally handle.

In my sessions, I found the *VLA 500* to be very useful on a number of sources, during both tracking and mixing. I compared the *VLA 500* to 500-series compressors from Chandler, APA, and Inward Connections; and while the *VLA 500* didn't provide the smooth and forward transformer sound or class-A sheen of those other compressors, it proved effective and unique in its ability to handle compression and tone-shaping duties. On rock kick, a slow attack and fast release easily added more smack and consistent dynamics to the kick, while the Punch and Grit could be used to dial in some analog overdrive character. Jack White would approve of the bombastic kick drum I achieved with a high compression ratio, fast attack, fast release, and Grit on. Alternatively, on upright bass for a jazz recording, a relatively high ratio with medium attack and release settings provided natural dynamic control, without any tonal coloration or saturation effects. I also used a pair of *VLA 500s* across a vocal bus of rapper Tyga. The vocal stem was already processed and premixed with Tyga's preferred EQ and effects, and the *VLA 500s* let me dial in just enough dynamic control, with a medium ratio, medium attack, and fast release, to help the vocal stem sit nicely in a dense pop/R&B mix, while still retaining the original stem's character and effects balance.

All-in-all, the *VLA 500* shows itself to be a strong contender as a 500-series compressor — at any price. At \$199, this box is in the “can't resist” class of gear.

(\$199 street; www.artproaudio.com)

—Adam Kagan <adamkagan.ninja>

iZotope

Ozone 7 & Ozone 7 Advanced plug-in suites

Ozone 7 is a sizable update to the already feature-rich *Ozone* mastering suite of plug-ins [*Tape Op* #89]. The standard version of *Ozone 7* includes three new functions, while the *Advanced* version has seven.

Vintage Limiter pulls the “tube” mode found in earlier versions of Maximizer and gives it its own module. Both a faster and a slower setting provide responses not always available in real-world tube gear. Although inspired by the Fairchild 670, the plug-in departs from the original, providing more tweaking powers. In use, I didn't like it as much as Maximizer for mastering, but enjoyed it on instrument tracks and mix bus. Using Vintage Limiter results in a subtle change to transients (in comparison to Maximizer), and the change is easier to hear by bypassing the module once you've started using it (as opposed to when you first instantiate it). Worth mentioning is the equal-level audition feature, which is represented by the “ear” button. Added in an earlier version of *Ozone*, this function allows you to compare post-processed sound against the pre-processed source — with the listening levels matched. This reduces the chances of always preferring the louder version, even when it might not be an improvement.

The other two additions to both versions of *Ozone 7* are export formats and the IRC IV algorithm in Maximizer. Export is a time-saving feature for saving masters to different file-formats, sample-rates, and bit-rates. It supports rich

metadata, such as track name, song name, etc., when creating MP3 or AAC files. Seasoned users of Maximizer will recall that there are three flavors of IRC (Intelligent Release Control), which offer pre-optimized release responses depending on source material. IRC IV has multi-band and frequency-specific operation, which leads to less toll on the limiting processing. In use, IRC IV is more transparent and a better choice when you want to avoid pumping, or what I call “evident compression.” (It's what the kids like these days. When I was young, it was called “not knowing how to use a compressor” — but who can argue with success? Oh, please get off my lawn.)

Four new features are for *Ozone 7 Advanced* only: Vintage Tape, Vintage EQ, Vintage Compressor, and Codec Preview. Vintage Tape is iZotope's take on a well-maintained analog tape deck. I've been auditioning more than a normal share of tape plug-ins recently, and I would put this in the quadrant of good quality but easy to overdo. More directly, I would advise using it for mixing without hesitation. For mastering — as always — it depends. Instantiating the Vintage Tape module immediately powers on a virtual set of transformers and circuits in addition to the tape. There is an immediate “gelification,” with an enhanced firmness and a more solid midrange. This module is also a tweaker's delight, with provisions for altering harmonics, bias, input drive, and more. Clearly, a lot of work went into this module, and if you jump into *Ozone 7 Advanced*, I'll bet you'll spend the first day here without going anywhere else.

Vintage Dynamics is a hybrid beast in that you get modern multi-band control using a more classic circuit design. The best parts are the auto attack and release settings using the Adaptive Release feature, and the extensive control over sidechain, which includes a Thrust-like control (made popular by the API 2500 bus compressor [*Tape Op* #52]).

But honestly, the biggest surprise was the module I was prepared to be underwhelmed by — Vintage EQ. Your first impression of the GUI might be that it's boring, but I challenge you to find a more straightforward implementation of the Pultec program equalizer's paradigm. Let's face it, using a real Pultec, when you have two hands simultaneously twisting knobs, is a very rewarding experience. But using most Pultec plug-ins stinks. Half the time, you're bouncing back and forth between cut and boost knobs, and the other half of the time, you're wondering if you grabbed the wrong one. (Which knob is related to which? Is it the one next to the first one, or the one above it at an angle?) With Vintage EQ, it is very clear what each feature controls. Most importantly, I have never had an easier time doing final touches with an EQ plug-in than with this one. Yeah, it might look like an extra from the 1960s-era TV show *The Rat Patrol* (how old am I?), but it sure sounds nice.

Codec Preview, as the name states, offers real-time preview of master files after they are converted to MP3 or AAC. The best part is that you can compensate for any changes you hear post-conversion, while A/B'ing the source versus target. You can even solo just the difference signal (the information that's being thrown out by the “lossy” codec). Honestly, mastering to a codec-compressed music file is a time-consuming process otherwise. Mastering engineers traditionally run passes of a song using different data-compression settings, compare them, go back with changes, re-render, re-compare, and repeat. It's very important in the Internet age to follow through with the sonic effects of data-compression, but the aforementioned workflow is very slow. Anything that speeds this up is a lifesaver. Let's face it — our clients very much need this service, but few have the full

budget it requires. Codec Preview provides you with instant feedback on MP3 and AAC data-compression, which makes it much easier for you to reactively adjust how you're mastering the song for the chosen codecs. This speeds up your workflow and reduces its financial impact on your client's budget. I think those are good things.

iZotope closed some of the holes that many of us didn't know previous versions of *Ozone* had. *Ozone* is increasingly an all-in-one solution that alleviates the need for other plug-ins. While you may or may not have other choices for tape, EQ, and dynamics processing that you favor, it's undeniable that the new *Ozone 7* modules go far beyond useful; they will go toe-to-toe with any other market offerings.

(*Ozone 7* \$249, upgrade \$99; *Advanced* \$499, upgrade \$199; www.izotope.com)

—Garrett Haines <www.treelady.com>

Herbert Janßen

SY Programming (technical paper)

Every rare once in a while, I stumble across something on the Internet that is so unique, overlooked, and vital, that I feel I need to point it out to somebody. *SY Programming* is one of those finds. Written in 2002 by Mr. Janßen, it's seemingly a how-to guide on programming the Yamaha SY77, an overlooked digital synthesizer from the post-DX7 years. But once you start reading this paper, it becomes clear that this document is so much more.

If you've been reading my sporadic reviews on synthesizers and software over the past couple years, you'll likely guess that I've been looking to uncover some of the missing links that lie somewhere between early modular analog synthesizers, early digital synthesizers like the Synclavier, and current software synths (many of which are iOS-based) that can emulate nearly any hardware synth ever made.

At some point, I'll write a review of the SY77 that I bought on reverb.com (for a small fraction of its original cost), but for now, I just want to suggest that anybody who is interested in digital synthesis (FM in particular) — or any signal creation or modulation approach really — should read this 61-page document. What makes it so unique in my mind is that it's presented in a very formal, academic “technical paper” format, but it's written in an easy-to-understand style that takes a complex subject and makes it immediately accessible. Janßen's background is in robotics, and he holds several patents in that field, which clearly qualifies him to discuss technical matters. But he seems to realize that most of the people who will want to read this paper are not scientists or programmers, but producers and musicians, and he speaks directly to the latter group. His explanation of John Chowning's FM synthesis algorithm is the easiest to understand I've read, as he breaks it down into very basic, practical, conceptual blocks and examples — and only at the very end of the paper does he get into the actual math and theory behind FM synthesis. As a bonus, the paper includes a comprehensive overview of pretty much every analog and digital synthesis method invented, covering both history and theory, and even offering some real-world examples of synths that implement those methods.

If you're interested in synthesizers and synthesis techniques, especially FM and Yamaha's overlooked AFM, *SY Programming* is a must-read.

(free download; www.herbert-janssen.de/doc/sy-prog.pdf)

—JB