Review: Deva Revisited

It's been nearly two years now since the Zaxcom Deva-II made its debut. As most know by now, the Deva is a portable hard-drive recording system specifically designed for synchronous location sound for film and TV production. How is it doing? Let's take a look.

Now that the dust has settled, the Deva has emerged as an undeniable step forward. It has successfully outgrown the skeptical phase that always challenges a new format, and is not only the choice of a large portion major feature film productions, it is gaining ground on commercials, short productions, and 24P High Definition productions as well. Features of the Deva that caused the initial "oohs" and "ahhs" have now spoiled its users to the point that it's difficult for them to go back to anything else. But what has become possibly the most interesting attribute of the Deva recorder is that it is "refine-able" without changing a single piece of hardware. For example, if Zaxcom is convinced that a button would be more useful as, for instance, another monitor select option, then Viola! Just install a new chip and it is done. The recent addition of a 23.976 timecode frame rate for 24P High Def video productions (making it the first and only sound recorder with this ability) is a good example.

Such refinements have been implemented steadily as suggestions came in from Deva owners who put their machines to real-world tests. It has been both interesting and reassuring to watch the Deva evolve. It's interesting just that a machine can mature without changing anything physically, and reassuring because this machine can outgrow obsolescence unlike any field recorder we've ever had.

In my opinion, the best thing about the Deva system is that, along with its companion "mirror" drive (currently the DVD-RAM), it is actually a recorder and backup system in one. The way the Deva is now most commonly being used goes something like this:

When pressing RECORD, the Deva records to its internal hard drive. When pressing STOP, the Deva "mirrors" (copies in .sd2 or .BWF files) to a DVD-RAM disk (a storage media that resembles a CD). When it's time to send the elements to post production, the DVD-RAM disk is turned in just like we do (did?) with Nagra ?" tape or DAT tape. What remains on the Deva's hard disk is a perfect backup copy of the day's work. It is perfect because the "backup" on the hard drive is actually the original recording. In the event the Production Assistant leaves the DVD-RAM disk in a Taxi, what better way to reproduce the day's work than from the original? Now that the hard drives are available in such large capacities (30G is now common) the Deva can easily keep a full week on a single hard drive, each day on its own partition. When it's time to re-cycle the hard drive, it can be reused one partition at a time, allowing seven days of backup to always be kept. The paranoid can rotate two hard drives and always keep 14 days of backup. Some users are keeping entire shows backed up with a few hard drives. Couple this with the fact that I've not yet heard of a failure of a DVD RAM disk, and we have a system for safety that nothing before has ever come close to matching.

The DVD-RAM disk is a much better archival media than analog or digital tape. With a shelf life of over 100 years, the DVD-RAM is impervious to aging and, within reason, is oblivious to changes in humidity and temperature. A 12 volt powered Direct Drive DVD RAM drive enclosure is available by Remote Audio Products (up to 12 hours on an NP-1 battery) making the complete Deva system very easy, convenient, and totally portable.

Deva made its start primarily in the major feature film production arena. This is ironic because I believe the Deva will become most appreciated in the smaller budgeted short projects such as documentaries, commercials. The Deva's nonlinear digital recording gives it an advantage even a producer has to love: It can save incredible amount of time (money) in post production. For instance, transferring from the DVD-RAM disk into a digital audio workstation (DAW) can actually be a drag-and-drop file transfer much faster that the actual record time. And, when used in telecine, its instant access and cueing adds no time to the transfer.

The instant playback cuing and ability to store cue points makes the Deva an ideal machine for music video playback. Couple this with it's exclusive ability to handle 23.976 timecode, and it becomes the only portable machine that can properly deal with music videos shot with the 24P High Def cameras.

One would think that all of this advantage would certainly cost a lot more money than the traditional way of doing things, and would, logically, be worth it. But actually, gearing up for Deva postproduction is the least expensive,

most cost effective media change ever made since the original Nagra. For starters, when transferring into a workstation such as an Avid, only the addition of a $300 DVD drive is required to play or transfer the recording. Even when a stand-alone playback machine is needed, the new Fostex DV-40 DVD machine can be linked to several transfer rooms via its Ethernet port, allowing one machine to do the work of many. Also, Zaxcom now makes a postproduction version called the Studio Deva, a machine that will play from either a DVD recording or the original Deva hard drive.

No matter how beneficial change is, there is always some resistance. Even technology in the memorable past such as the timecode Nagra and the DAT were only finally embraced after producers realized that using them could save time/money. While this has now become the case with the Deva in large feature film and television film production, I predict it will be even more quickly appreciated for the type of production that keeps most of us working: Commercials, documentaries, music videos, and other short-form production. It would certainly be icing on the cake if the Deva's acceptance was because of the increased audio quality it has to offer, or the ability to record 4 tracks, or the SCSI backup system, or the achievable DVD media. But in the end we'll have to concede, as always, that it's because the Deva makes the producers more money.

Slate and Recorder Timecode Accuracy (Get the Drift?)

Few things dampen a film sound mixers day than to hear back from postproduction that the timecode drift of his or her equipment has cost extra time (money) in transfer.

Interesting fact: Remember the early Denecke timecode generators that would flash "FEED ME" after four hours from being set? This feature was discontinued because some people thought it meant they had lost sync, but actually, it was only meant to be a reminder that re-jamming might be a good idea. This feature also created the misconception that the Denecke SyncBox was only accurate for four hours, but this was not true either. Michael Denecke chose the four-hour interval not because of his generator, but because of the accuracy of the Nagra timecode generator.

Basically, timecode generators are not much different from the digital clocks we wear on our wrists. The main difference is in the accuracy required. For instance, a wristwatch that gained or lost 5 minutes per year would be considered respectable. However, a loss of 5 minutes per year equals a drift of approximately 10 frames in 10 hours, which is absolutely unacceptable in synchronous film and video production (even an untrained eye will detect a lip-sync discrepancy of 2 frames).

The timecode generators made by the two main slate manufacturers, Denecke and Ambient, can both provide accuracy of within 1 frame in 10 hours. Since the spec for most timecode recorders is within 1 frame in 4 hours, then, logically, re-jamming the slate to the recorder could be done at meal break (every 6 hours) and still maintain a maximum drift of less than 2 frames.

But that's if everything is in spec. It is our experience that it is not uncommon for recorders to be outside of their accuracy specification.

Temperature changes are the most significant factor in a timecode generator's stability, and since digital recorders can produce and retain a fair amount of heat and the recorders are often partially enclosed, the recorder is the most likely source of unwanted drift.

Trew Audio's service shop is equipped with high precision frequency counters and timecode analyzers. A routine check-up in our shop can verify clock accuracy of your recorder and slate, adjusted as needed, and then get them back to you quickly.

Still have questions? Anything you'd like to add? Log on to "The Discussion Zone" on our website (www.trewaudio.com) to read or contribute to the topic.