

Let's get right to the point: Simmons has made a major advance in electronic drums. That shouldn't come as too big a surprise; after all, it was Simmons who proved that electronic drums could be more than Syndrum/Synare-type sound effects, and who have to be given the credit for producing the first viable alternative to an acoustic drumset.

But even though Dave Simmons was the original pioneer in this area, that was no guarantee that his company would continue to stay on the leading edge. Historically, after a small company has developed a new idea and proven that it can work, it is common for much larger companies to come along and use their considerable resources to develop that idea in a way that the original company can't begin to compete with. This is especially true in the electronics field, where there is a constant demand for new and better products. So it would have been no big surprise if someone other than Simmons had made the next big leap.

But since Simmons have dedicated themselves exclusively to the idea of electronic drums, and received their share of hostile criticism for their trouble, then perhaps it is only fair that they should continue to be the major innovator in the field. And the SDSX is truly a major innovation.

In this review, we are going to dispense with some of the usual details—such as how the pads are constructed, the dimensions and weight of the kit, and step-by-step descriptions of how to program it—and concentrate on what it does and why it is significant.

The Computer

The single most important feature of the SDSX is that it is based around a computer. While that might seem intimidating to some people, it has the potential of eliminating one of the biggest problems with electronic drums: obsolescence. Let's look at that in terms of electronic drumsets and personal computers.

The first significant electronic drumset was the SDSV. A lot of drummers bought them, and at the time, they were the state of the art. Then came the SDS7, which had a number of major improvements. The trouble was, even though some of the general characteristics were the same, the basic architecture was different—software-based memory as opposed to manual controls. If you wanted the improvements, you couldn't simply upgrade your SDSV; you had to purchase a new instrument. A similar thing happened a couple of years later with the SDS9. It's no wonder that a lot of drummers got fed up with the idea of electronics.

Let's compare that situation with personal computers. Several years ago, *Modern Drummer* bought a couple of Macintosh computers. At the time, we were amazed by all of the things they could do, but improvements were being made constantly. Suffice to say that now we can do so much more, *but we are still able to use the same computers we bought four years ago*. Yes, we've spent money on various new programs, and at one point we invested in memory upgrades for the computers themselves. But all of that was minor compared

to what it would have cost to buy a whole new computer every time there was an improvement of some sort.

Applying that idea to electronic drums, suppose that the SDSV had been computer based, and that the SDS7 and SDS9 improvements could have been offered as software updates. We dare say that more people would be using electronic drums today. Well, Simmons can't do anything about the past, but they seem to be thinking ahead to the future. Even in the few months that the SDSX has been available, several upgrades have been made, and more are promised. It's conceivable that the SDSX will be the last electronic drumset that a lot of drummers will have to buy. After that, they can simply upgrade the software. So although the SDSX has a pretty hefty price tag, in the long run, drummers might end up spending less than they would if they had to completely replace their system every two or three years.

The SDSX console is set up somewhat like a cross between a Macintosh computer and a drum machine. The most obvious feature is the 9" monitor screen, which is controlled by a tracker ball (sort of like the mouse on the Mac). There is also a slot that holds 3.5" floppy disks (again, like the disks on a Mac), and there are 16 keypads. The keypads can be set for various functions: each one can be a different drum; each one can be a different dynamic for a single drum; or each one can be assigned to call up a different kit. It is possible to completely program and play back the SDSX just from the console, without using any drumpads. In that sense, the SDSX can function as a drum machine.

Everything is done on the screen, from selecting kits to editing sounds to mixing. While the idea of having to use a computer might be discouraging to some, the SDSX is very user friendly. The graphic displays are logical and easy to use, and there are "help" commands available for every step of every application. As an example of the SDSX logic, the mixing screen is set up to resemble a real mixing deck, and you use the tracker ball to "move" the various controls the same way you would on an actual mixer.

Another interesting feature of the SDSX is the automatic trigger. In order to program most electronic drums, you are forced to tap on a pad with one hand while you adjust controls with the other hand. The SDSX will play itself while you are programming it. You can have it play only the pad you are working on, or you can have it play other pads as well so that you can hear how everything is blending together.

Simmons SDX

The automatic trigger is very easy to set up, and it can save a lot of time while you are programming.

Zone Intelligence

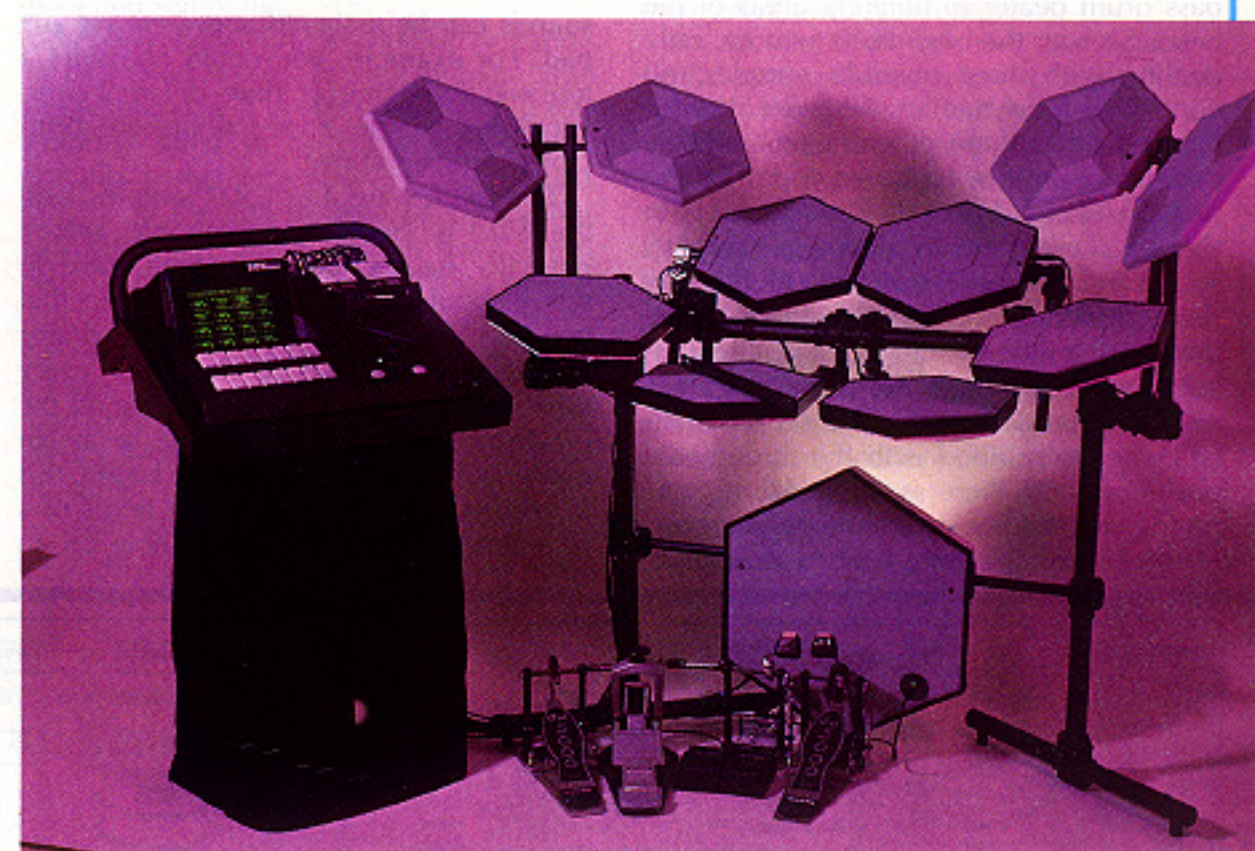
The next significant feature of the SDX involves Zone Intelligent pads. Basically, this means that you can get different sounds from different areas of the pads. You can also generate different sounds according to how hard you hit the pad—and I mean different *sounds*, not just different volumes.

Obviously, this is something that has been lacking on electronic drums. Everyone knows that on an acoustic snare drum you can get a lot of different sounds. The center of the drum doesn't sound like the edge of the drum, and the center of the drum struck hard doesn't sound like the center of the drum struck softly. But with electronic pads, you were stuck with the same sound no matter where you struck the pad. The best you could hope for was that the pad was velocity sensitive so you could get dynamics.

But Simmons has come up with pads that are capable of holding nine different samples: three different striking areas on the pad, times three dynamic levels on each area. Let's look a little more specifically at how this works.

Going back to our acoustic snare drum example, let's designate three areas of the head: center, off-center (the area between the center and the edge), and edge. Within each of those areas, we can designate three dynamic levels: soft, medium, and hard. With the SDX, you can sample each of those sounds from an acoustic drum and assign it to your snare drum pad. The significant thing about these dynamic levels is that you're not just playing the same sample at different volumes; you are actually triggering different samples. In other words, when you hit an acoustic drum in the center with a soft stroke, and then hit it in the same place with a loud stroke, the difference isn't just the volume. It's also the timbre. It's the ability to assign three different timbres of the same sound that makes the SDX the closest thing to acoustic drums yet.

The above example of sampling nine different sounds from the same drum and assigning those sounds to corresponding areas of an SDX pad represents only one way of using the Zone Intelligence. Theoretically, you could have nine totally unrelated sounds assigned to a single pad. For example, the edge struck soft could be a



bass drum; the edge struck medium could be a woodblock; the edge struck hard could be a cymbal; the off-center area struck soft could be a snare drum; the off-center area struck medium could be a conga; the off-center area struck hard could be a cowbell; the center struck soft could be a tom-tom; the center struck medium could be a hi-hat; the center struck hard could be a handclap. That's theoretically. Practically, it would take an incredible amount of control to be able to access those sounds consistently.

Even with the snare drum example, you might not want all nine of the snare drum samples. Again, you would have trouble accessing all nine of them consistently anyway. You might want to limit your options to three samples: a soft sound, a medium sound, and a loud sound. You would have your choice as to how you controlled those sounds. If you wanted to control them simply by how hard you hit the pad, you would assign the soft sound to all three areas at the soft dynamic, the medium sound to all three areas at the medium dynamic, and the loud sound to all three areas at the hard dynamic. If you would rather access the three sounds by where you hit the pad, you could assign the soft sound to all three dynamics on the edge, the medium sound to all three dynamics in the off-center area, and the loud sound to all three dynamics in the center.

The point is, you have a lot of options,

from assigning the same sample to the entire pad—so that no matter where you hit it or how hard, you get the same sound—to assigning nine different samples—as described above—to everything in between. We found that, for most applications, four or five samples per pad gave us a nice balance between being able to approximate an acoustic drum and being able to control the sounds consistently. One application for which we favored all nine samples, however, was a ride cymbal. Even though it was difficult to control all nine samples consistently, by having all of those cymbal sounds on the same pad, we were able to approximate the sound of an actual cymbal very nicely when playing jazz patterns. It's all of those little differences in timbre and volume that distinguish an acoustic instrument from the sterile sounds of most electronic instruments, but the SDX can give you a lot of variety in that respect.

We should mention a few other things, such as the fact that each of the dynamic samples is dynamically sensitive within itself. In other words, let's say you are playing the off-center area of the pad at the medium dynamic. You can get louder and softer within that dynamic. If you get too loud, you will move into the loud dynamic area, and if you get too soft, you will move into the soft area. But you can adjust the points at which that happens. For example, you can set it to where the medium area is fairly large, so that you only get into the

hard area if you hit very hard, and you only get into the soft area if you get very soft.

We've been describing the pads in terms of being able to hold nine samples. For the most part that's true, but there are exceptions. The snare drum pad also has a fourth area—the rim—that can hold three dynamic levels of its own, giving the snare drum a total of 12 possible samples. The bass drum, on the other hand, doesn't have three areas, as it would be impossible to move the bass drum beater to different areas of the head. So with the bass drum, you are only dealing with three possible samples, all controlled by dynamics. Likewise, the hi-hat pedal has three different possibilities, depending on how far down you press the pedal. You could have a closed sound with the pedal all the way down, a "swishy" sound with the pedal not quite all the way down, and an open sound with the pedal down just a little bit. (Sounds like a real hi-hat, doesn't it?) There are two strike areas on the hi-hat pad, giving you six possibilities when combined with the three pedal positions, and there is a "pedal trigger" setting that holds a seventh hi-hat sample.

The "Symbol" pads have a couple of

The Sounds

A number of "sound disks" are supplied with the SDX, and more are becoming available all the time. The sounds are organized into "kits" that have names such as "rock," "jazz," "ambient," "dry," etc. But it is possible to put any sound into any kit, or to make up new kits from a variety of sounds. And with the potential for editing the existing sounds, one has a tremendous number of possibilities right off the bat. Also, the sounds can be assigned anywhere on any pad. For example, you could construct a tom pad from three (or more) different toms, according to the zone-intelligence principles outlined above.

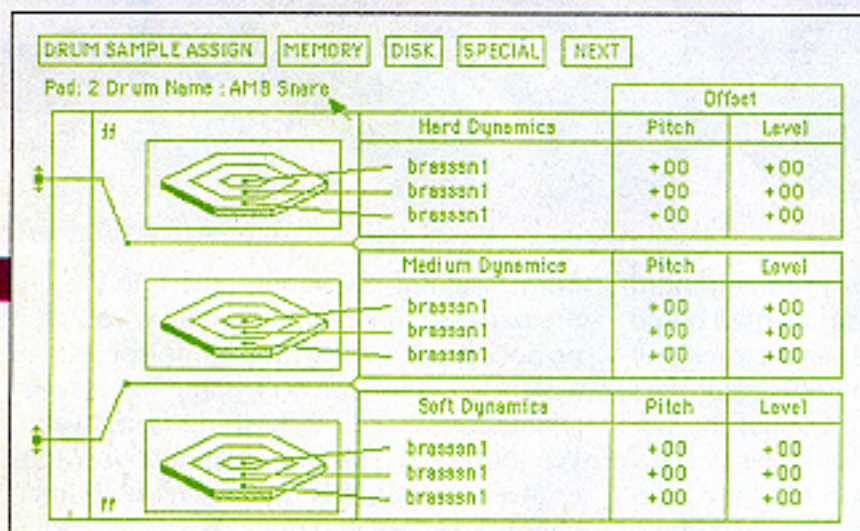
The sounds are all digital samples, and the SDX is 16-voice polyphonic, which basically means that you don't have to worry about that "machine-gun" effect that you can often get from electronic drums when the sound has to start over every time you hit a pad, thereby cutting off the previous sound. By being able to assign more than one voice to a single sound, this is avoided. Let's look at this in terms of a ride cymbal. When you hit a note on an

would make it possible to play fairly fast fills around the toms without any of the notes being cut off. In addition, there is a "voice-robbing" feature that comes into play if the SDX does have to stop a voice to start a new one. The machine automatically shuts off the voice with the lowest volume, which means that you probably wouldn't hear it stop.

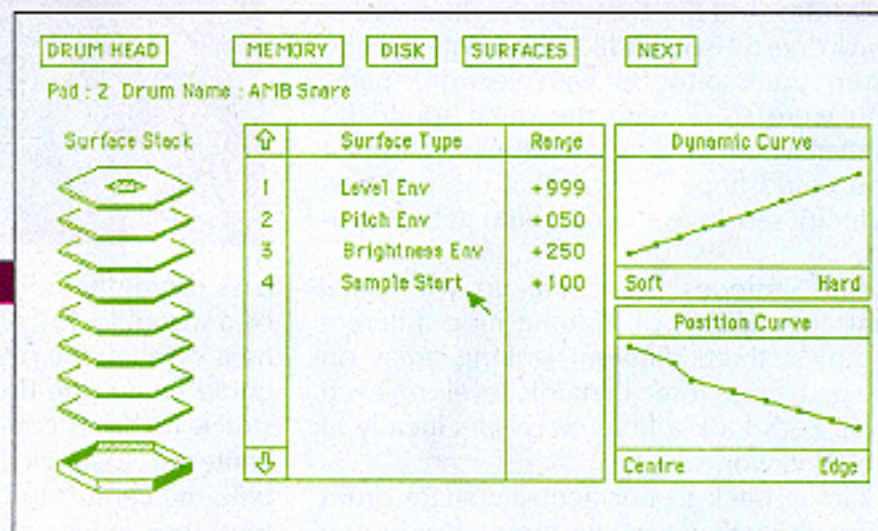
Added to that is a feature called Velocity Start Point, which lets you program a sample so that it starts from different points in its cycle, depending on the velocity with which it is struck. That is especially useful with cymbal samples, and is another way that the SDX overcomes the problem of machine-like sounds.

Sampling

The other major highlight of the SDX is its 16-bit sampling at a sample rate of 44.1 kHz, which is the standard for compact discs. The overall process is easier than with most samplers on the market, and once the sample is recorded, there are a variety of ways to alter the raw sample by editing its various envelopes. The end result is that there is no limit to the sounds you can



Sample Assign Screen: This allows you to assign up to nine different samples per pad, controlled by position and dynamics. In this example, the same sample has been assigned to all nine areas.



Drum Head Screen: This divides each drum pad into several "surfaces," each surface representing a different parameter such as level, pitch, brightness, noise, etc. Each parameter can be edited.

unique aspects of their own. First, they pivot. Originally, we couldn't quite see the point of this from a musical standpoint. But when we started playing jazz ride patterns on it, we began to realize that, from years of playing on cymbals that tend to move back and forth a bit when laid into, we had subconsciously developed certain wrist and arm movements that went along with moving cymbals. The fact that these pads moved in a similar way seemed to make them more comfortable when playing these types of patterns.

The other interesting thing about the Symbol pads is that they have an area on the edge that you can grab, thereby cutting off the sound the way you would if you "choked" a real cymbal. That's a small point compared to some of the other capabilities of the SDX, but it's a nice touch, nonetheless.

acoustic cymbal, it rings for a couple of seconds. With most ride patterns, you will be striking the second note while the first note is still ringing. But with a lot of electronic drums and drum machines, every time you strike the cymbal sound, it first cuts off the previous sound, giving an unnatural effect. However, the SDX lets you assign more than one voice to a sound, so that while the first voice is letting the first strike decay, the second voice is starting the second strike, and so on.

The 16 voices can be spread out over the entire kit, and different pads can share the same voices. For a short sound such as a bass drum, you might only need one voice. For a fat snare drum, you might want two voices, especially if you wanted to play flams. For buzz rolls, you might want four or five voices. A cymbal might require three voices. But all of the toms could be assigned to the same eight voices, which

come up with for the SDX.

Quite honestly, sampling is not for everyone. While the SDX sampler is easy to use, sampling itself is an art, and at best it takes a lot of time and patience. While some players enjoy having the ability to customize their own sounds, a lot of other players would prefer to concentrate on playing and let someone else create the sounds. (Chick Corea, for example, hires a synth programmer, leaving Chick free to play and compose.) By the same token, many of the people who specialize in sampling and programming are not players at all.

By virtue of its sampler, then, the SDX is not for drummers who are only interested in playing. A lot of the money you would be spending on the SDX is for features—such as the sampler—that let you create new sounds. To have that technology and not use it would be a waste. Those who want access to a lot of different sounds but

who do not want to invest the time necessary for sampling their own would be better off with something like an Akai S-900, for which a huge library of sounds exists.

The Price

The basic SDX 10-piece kit has a suggested list price of \$9,990.00. It includes the standard console with two megabytes of RAM, one bass drum pad, one snare drum pad, four tom pads, one hi-hat system, three Symbal pads, and cables. If you want stands for all of that stuff, the console stand will cost another \$399.00, and the 10-piece drum rack will cost \$634.00.

If you just want the basic console by itself, you can buy one for \$7,960.00. You can also buy memory upgrades for the console. A two-megabyte RAM expansion costs \$900.00. The unit starts out with two, and you can add on up to six, for a total of eight megabytes of RAM. If that's not enough, you can have a hard disk factory-installed for \$1,750.00, which will give you 20 megabytes.

Things To Come

Simmons recently sent out a free soft-

ware update that allows the SDX to serve as a keyboard sampler. The next promised major upgrade will enable the SDX to function as a very sophisticated sequencer. The sequencer update is expected to sell in the \$300.00 range, which isn't much compared to the cost of the basic hardware. When you consider a system that functions as a keyboard sampler, a sequencer, and a complete electronic drum system, the overall price starts to make sense. You are now looking at an instrument in the Fairlight or Synclavier league, but that would actually cost less than those instruments.

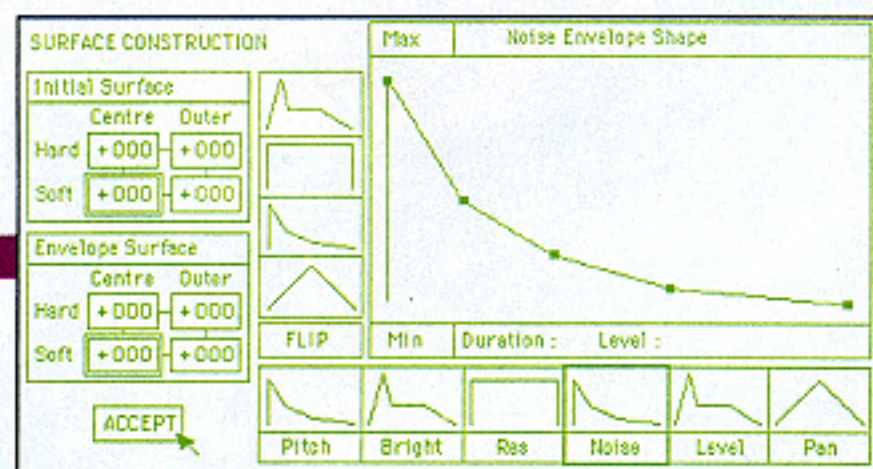
There is something else that is likely to happen, even though Simmons has not announced anything specific in this area so far, and that is the "trickle down" effect. Essentially, whenever a certain instrument becomes a flagship for a company, smaller versions of that product are usually developed for those who can't afford or simply

don't need all of the features of the original instrument. In the case of the SDX, a logical next step would be some type of "brain" unit that simply reads disks. One could buy a set of the zone-intelligent pads, plug in disks that already contained a variety of sounds and setups, and play. This would be useful for those who are interested in a good electronic drumset, but who would just as soon not get involved in programming and sampling. Actually, such a unit would also be handy for drummers who have the complete SDX and want to use it in live performance. You wouldn't need to be programming and sampling at the gig; you would merely need to call up the sounds and programs that you set up at home. Taking the current console to a gig would not be especially practical, given its size and weight, not to mention the fact that you wouldn't want to subject such a unit to the hazards of the road or to a typical club atmosphere. But a playback-only unit could be perfect in those situations.

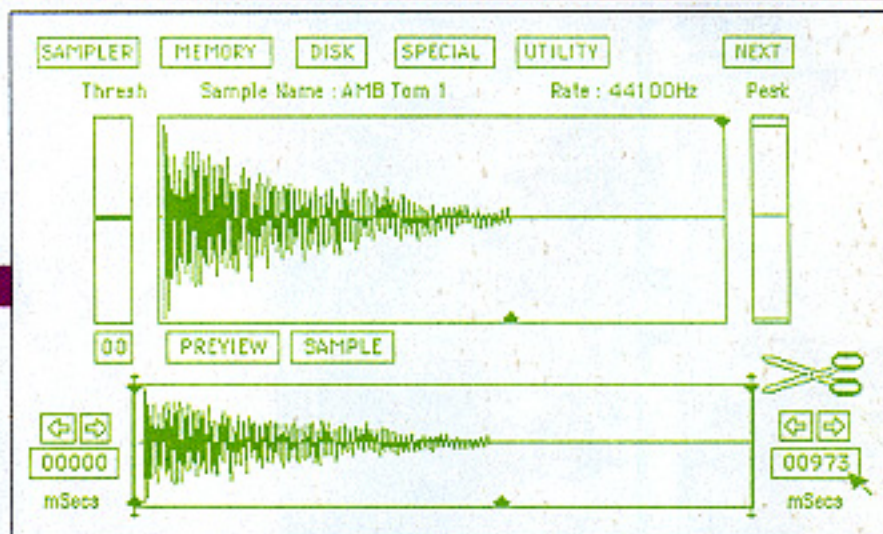
Again, Simmons hasn't announced anything such as this, but if enough people get

You can also perform on the SDX. But in addition, the SDX can digitally record the performance and can then be used to edit that performance—not just the sounds, but the performance itself. And don't forget that the sampler gives you access to virtually any sound, and that you have full mixing capabilities. In short, where an acoustic drumset is simply a musical instrument (and we do not mean to imply that there is anything wrong with that), the SDX is a complete MIDI production unit. As such, it will be most useful in the studio environment, where control is the name of the game. In fact, we feel that an instrument such as this could help put an end to drummers being replaced by drum machines. In a lot of cases, the reason that a drum machine is used to begin with is that it is easy to make changes anywhere along the line. Sounds and rhythms can be changed at will to fit the track. The machine might not be as expressive as a live drummer, but a lot of producers are willing to sacrifice expression for flexibility. Again, once an acoustic drumset is recorded on tape, very little can be done with it.

But with an instrument such as the SDX,



Surface Construction Screen: For each of the surfaces on the Drum Head Screen, a window like this can be opened for editing. Several preset envelope shapes can be selected, or the user can use the tracker ball to draw new shapes or adjust preset ones.



Sampler Screen: The sample wave can be edited in various ways. In this screen, the truncate points can be selected, allowing the user to remove noise from the end of a sample or remove some of the attack from the beginning.

involved in the SDX, it is most probable that the technology will start to filter down into other, less costly products.

Conclusions

While a lot of the features of the SDX are designed to approximate the characteristics of acoustic drums, one should not approach an instrument such as this with the attitude that it is merely an electronic device that is trying to copy an acoustic instrument. Rather, this is an alternative to acoustic drums that must be dealt with on its own terms.

To attempt to put this in a nutshell, an acoustic drumset is a performance instrument only. It can be played, period. Yes, you can record it, but that involves additional equipment such as a tape recorder, microphones, etc. And after you record the performance on tape, there is only so much you can do to it.

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a live drummer can play the track, and because of the zone-intelligent pads and the sophistication of the SDX sampler, the drummer's expression can come through to a much greater degree than is possible on any drum machine. But because the SDX can record that performance digitally, the producer (or the drummer, or whoever) will have the same (or better) control as he would with a drum machine. So who is this instrument for? It's for drummers who want to create their own identities—drummers who want to use their own samples and have total control over their own performance. It's also for people who are interested in exploring alternatives in musical instruments. Some of these people might not be performers; they might be programmers. But either way, the people who eventually use the SDX are going to be explorers, and it is going to be interesting to hear what they discover.



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