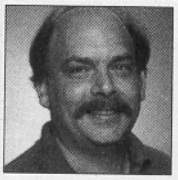
DRUM MACHINE PROGRAMMING



NORMAN WEINBERG

SAMPLING YOUR DRUM MACHINE

THERE ARE SOME GREAT DRUM MAchines out there today. But what if your machine isn't quite as close to state-of-the-art as it once was? Should you chuck it down the garbage chute, use it as a doorstop, or let your dog chew on it? I don't think so.

You can pump some new blood into your old machine by sampling it. During the last few years, samplers have been growing stronger in terms of their ability to make a sound "come alive." Below are a few ideas for turning your sampler into a sophisticated drum machine with more percussion processing power than you may have thought possible.

There are only a few simple steps to using your sampler as the sound source for your drum machine. Once you've sampled all the sounds from your drum machine, simply connect a MIDI cable from the drum machine's MIDI output to your sampler's MIDI input. You might want to double check that the drum machine and the sampler are set to the same MIDI channels. Next, be sure to map your samples correctly so that the buttons on your drum machine will trigger the proper sounds in the sampler. Turn the sampler's volume up and turn the drum machine's volume off. Keep in mind that some drum machines send out extremely short note-on messages. For this reason, you may have to massage the release portions of the sampled envelopes to hear the entire sound.

Changing the Sample Start Point. Only a handful of drum machines allow you to adjust the point of your sample where playback begins. The attack portion of a sound is one of the most critical aspects of a sound's identity. For that reason, altering the start point is one of the quickest ways to create a new sound.

Most of the bass drum sounds included with drum machines have a nice punchy attack, as if the drum was played with a hard felt or wooden beater. This is a super sound for funk, fusion, and good ol' rock and roll. But start the sample shortly after the attack and you'll be rewarded with a bass drum sound that is more closely related to that of an instrument struck with a soft wool beater — perfect for gentle ballads. By moving the sample start point on a ride or crash cymbal, you can totally hide the attack of the stick. Also, modulating the sample start point from velocity will allow more or less of the stick attack to be sounded in real-time in relation to the incoming velocity.

Envelope Editing. Sophisticated envelope controls are another justification for sampling your drum machine. Plenty of popular drum machines have lousy envelope controls — some with decay as their only envelope parameter — but a basic sampler, on the other hand, will likely have four, five, or more stages to its envelope controls. You might think that drum sounds don't have enough length to take advantage of a multi-stage envelope. Wrong. Suspended, crash, and hand cymbals are prime candidates for envelope manipulation, as are longer percussion sounds such as timpani, vibraphone, whistles, and quijada.

Here are a couple of ideas. Lengthen a crash or ride cymbal's envelope attack to get a psuedo brushed cymbal effect. Slowing the attack rate on a snare might transform a cracking snare drum to one that would be just right for mellow compositions. And if your envelope has a "hold" parameter, you easily can create gated effects from sustained sounds.

Stereo Placement. Every new drum machine has stereo outputs, but what about older units? E-mu Systems' SP-12, for one, only offers individual mono outputs and a single mixed out. But once you sample the drum machine's sounds, you can use the stereo processing power of your sampler to enhance the spatial dimensions of your drums.

Even on newer drum machines, the stereo options include little more than specifying a sound's position within the stereo field. On the other hand, samplers routinely let the performer map note-velocity to stereo placement. It's easy to have softer and louder snare drum strikes come from slightly different areas within the audio spread. How about this: Map the sampler's LFO to stereo placement, and have cymbal crashes, open hi-hats, or long, resonant snare drum hits slide from left to right. Can your new drum machine do that?

Filter Cutoff. By altering a sample's cutoff frequency, you can darken a bass drum, thicken a tom, or mute a crash cymbal. If your sampler has Q (resonance) control on its filter, you can design some unique sounds that no drum machine can produce.

Chorusing. At first, you might think that only snare drums and cymbals would be prime candidates for chorusing. But other percussion instruments with strong high-frequency content will work just as well. Adding chorus to your toms, congas, or kick drums is a little more subtle, but still effective. To do this, assign the same sound to the same key twice (with overlapping zones or your sampler's equivalent) and detune one of the two slightly using the zone's fine-tune parameter.

These are just a few of the ideas that you might try once you've sampled your drum machine. See what happens when you alter the tunings, use your sampler's resynthesis functions, or play around with time compression or expansion. Once you teach your old drum machine some new tricks, it might be just the thing to get new ideas flowing. ■

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