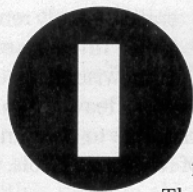IT'S ABOUT TIME

The Quest For Realism

BY NORM WEINBERG

IN THE NEVER-ENDING QUEST for more realistic and "human"-sounding drum programming, many folks have abandoned their drum machines in favor of software and samplers. Why? The sequencer lurking inside your drum machine can't hold a candle to powerful high-end sequencing software. Likewise, samplers offer many more alternatives for altering a sound's timbre than most drum machines do.

In the last issue, we explored a few techniques to make your drum machine sound more natural: programming with pads, working in longer patterns, using a wider dynamic range, and recording in high-resolution mode. This time we're going to investigate a few additional tricks that can be applied when programming your drum tracks on a computer and using a sampler for a sound source.

Perfecting Imperfection. Let's say you've just recorded a hi-hat track without quantization. Most of the attacks seem pretty good, but a few fall too early or too late. Instead of simply quantizing the entire track so it snaps precisely to a rhythmic grid, you might try "percentage" quantizing.

Depending on your sequencing software, you may have the option of quantizing only a certain percentage of the notes in a track, only a percentage of attacks that fall outside of a timing range (perhaps quantizing attacks that are more than 50 clock pulses early or late), or quantize with a percentage of strength. [*Ed. Note: While there are 24 MIDI* CLOCKS *per quarter note, most sequencers have higher internal resolution ranging from 192 to 480 pulses per measure.*] The concept behind using percentages is that some data is going to be altered and other data either will be left alone or modified to a different degree. The end result is that the track will sound more accurate, yet not quite perfect.

Even if math wasn't your strong suit in school, it's important to understand how percentages operate. Let's say that a track contains two delayed attacks: The first is 20 clock pulses late and the second is 36 "ticks" behind the beat. If these notes were quantized at a 40% strength, the first attack would occur at tick 12 (shifted

eight ticks forward) and the second at tick 22 (moved 14 ticks forward). Both notes now are closer to the beat, but the human element is still maintained.

If your sequencer supports it, you can use these same percentage options when adjusting velocities. Increasing the velocity of a track by 50% means that an attack of 60 would be raised to the value of 90, while an attack of 80 would jump to the value of 120. In essence, this serves to open up and widen your dynamic contrasts.

Putting Some Kick Into Your Samples. Speaking of dynamic contrasts, it's a documented fact that the timbre and pitch of an acoustic drum change as the strokes get stronger. A bass drum, for example, has a higher pitch and a punchier attack when played with a lot of force. It's easy to duplicate this effect when using a sequencer along with a sampler. Here's how:

1) Take your bass drum track and find the velocity level for the strong accented notes. Let's say that a velocity of 110 is going to be the cut-off point (remember that 127 is the maximum).

2) Next, cut out all the notes with a velocity of 110 and above, and paste them into their own track.

3) Transpose the new track to a different note number and assign the same bass drum sample to that note.

4) Finally, use the controls on your sampler to slightly detune the loud sample by just a few cents (remember, this effect is subtle). You also may want to open up the filter slightly on these louder notes, to achieve a brighter attack.
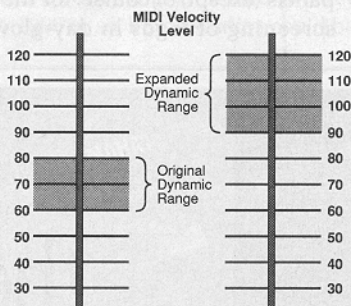
Double Your Options. Here's another little trick. Double-headed toms change their tone color as the bottom head resonates more and more with increased volume. To imitate this effect, create a duplicate of the tom track and assign this new track to a different sample. The sample played by the original track will serve as the sound of the upper head, while the sample played by the new track acts as the lower head. In the track assigned to the second sample, cut out any attacks below a certain velocity level so the more resonant sound only comes into play as the velocities increase.

The last step is to adjust the start time of the sample you're using for the bottom head. Since this sound functions as a resonating surface, you won't want to include the sound of the stick striking the head. Depending on your sampler, you may need to truncate the attack and/or alter the envelope to get the proper impression. You also may want to keep the second sample mixed low so that the effect is subtle.

Do you ever have trouble coming up with drum patterns that sound unique? Next time, we'll play a few games to give your creative juices a shot of adrenaline. •

MIDI Velocity Level

Expanded Dynamic Range

Original Dynamic Range

A 50% global velocity increase yields greater dynamic range.

Sequencers And Samplers Are Powerful Allies In Creating Realistic Drum Tracks.

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