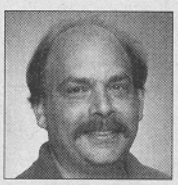
DRUM MACHINE PROGRAMMING



NORMAN WEINBERG

PROGRAMMING TIPS FOR CYMBALS, PART 2: LINKS & LAYERS

WE HAVE ALREADY DISCUSSED HOW samplers can be used to imitate the changing timbres of acoustic cymbals. This month, we'll see how linking and layering cymbal sounds across several drum machines can add more variation, movement, and originality to your cymbal programming.

During the last few years, there has been a proliferation of new drum machines and multitimbral expansion boxes that feature a full complement of drum and percussion sounds. The result is a steadily growing market of used electronic percussion gear at bargain basement prices. Link and layer a few of these older machines with one of the newer dedicated percussion sound generators, and you'll have a vast assortment of cymbal sounds at your disposal.

Linking. Most drum machines and multitimbral units let the musician assign which MIDI note numbers will fire particular sounds. You can use this feature to link several units together into a "monster" drum module. As shown in Figure 1, linking sounds across multiple machines is simple. Just assign the cymbals from different machines to successive note numbers on the same MIDI channel.

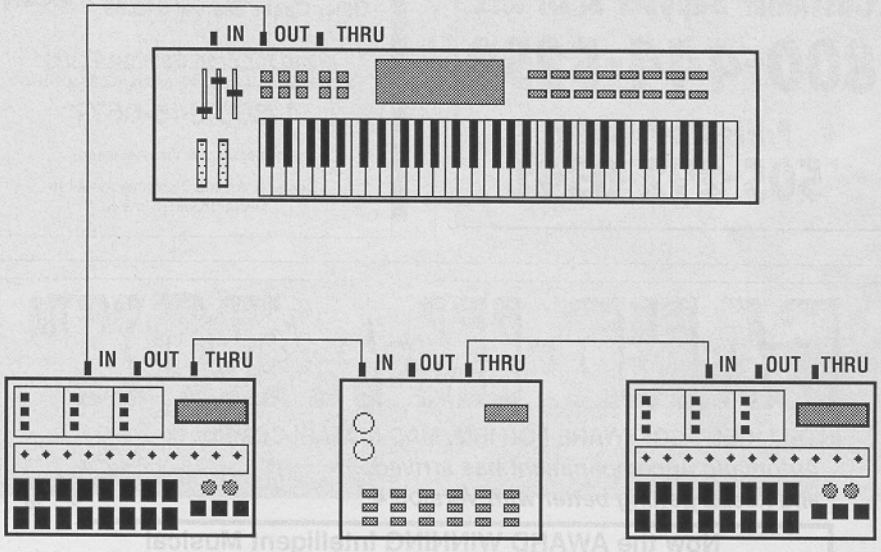
If one of your drum machines won't let you turn off a MIDI note number, you can try assigning the offending note to an empty voice location, or assigning it to a voice routed to an unused audio output. If all else fails, assign the note number to a voice that has a volume setting of zero. Your master keyboard or computer sequencer can now access the crash cymbal sounds from three different drum machines, all over a single MIDI channel. (How's that for MIDI economy?)

Layering. One of the primary triumphs in MIDI's bag of tricks is the ability to layer sounds. We're all accustomed to hearing fat stacks of harmonic pads, thick walls of slap bass, and orchestral hits that include the kitchen sink. But, for some reason, very few people stack cymbal sounds.

Stacking cymbals while keeping their colors clear and crisp takes a keen ear for balance and attention to detail. By using different relative volumes for each cymbal sound in the stack, you can create a crash cymbal that changes color as the dynamic level increases. You can mix the after-ring of a ride cymbal with the attack of strokes on the cymbal's bell, or create a hi-hat sound that is partly closed and partly open.

Many drum machines have controls that can be used to customize a sound. Typical envelope controls range from the simple adjustment of the decay time to a full ADSR envelope. Here's a little trick for ride cymbals that uses both links and layers with a few easy edits: On one machine, find a ride cymbal sound with a bright stick attack. Give this sound a short decay and copy it to several adjacent note numbers. On a second machine, find a ride cymbal with a

Fig. 1. Linking and layering across three drum machines.



LINKS

MIDI NOTE #	SOUND	MIDI NOTE #	SOUND	MIDI NOTE #	SOUND
36	Crash #1	36	Off	36	Off
37	Crash #2	37	Off	37	Off
38	Off	38	Crash #1	38	Off
39	Off	39	Crash #2	39	Off
40	Off	40	Off	40	Crash #1
41	Off	41	Off	41	Crash #2

LAYERS

57	Cymbal Bell	57	Ride Decay	57	Off
58	Off	58	Ride Stick	58	Ride Decay
59	Off	59	Ride Stick	59	Ride Decay +2
60	Off	60	Ride Stick	60	Ride Decay −2
61	Afuche	61	Off	61	Hi-Hat
62	Quijada	62	Crash	62	Off
63	Cross Stick	63	Ride	63	Finger Snap

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smooth and steady decay. Adjust this sound's attack so that it fades in just after the sound of the stick. Experiment with fine tuning the two sounds so that they blend well together. Now, copy the second sound to adjacent MIDI note numbers (as you did with the sound in the first machine) and detune or filter all of these copies. The general effect should be a ride cymbal with the same stick attack for each note, but with some minor variations in the sound's decay.

Newer drum units can respond to several continuous controller commands, while older devices ignore this type of information. At first, this would seem to be a problem, but it can work to your advantage. For example, controller #7 could vary the relative volume of one sound while the other layers stay the same (thus letting one aspect of the sound's composite color move in and out). Depending on your system, you could route the data from aftertouch to control a filter, or use the modulation wheel to vary a sound's decay.

Don't feel obligated to layer cymbals with other cymbals. Try mixing an *afuche* or other type of shaker underneath a tightly closed hi-hat to give it some width. Add a little *quijada* to a crash cymbal, or try some cross-stick rim shots or finger snaps behind a ride cymbal.

With a little planning and experimentation, you can use links and layers to transform several boxes into one monster drum machine covering the entire MIDI note range. ■