

Five Technical Tips for Triggering

BY NORMAN WEINBERG

THE CONTEMPORARY DRUMMER needs to know more today than ever before. Not only does the popularity and influence of international music require that today's drummer be familiar with more musical styles, but technical and technological advances demand that the working drummer understands how the new technology operates and how it can best be used.

One of the most popular uses of the new drumset technology is triggering. By attaching triggers to your acoustic drums—along with the proper additional electronic music gear—you can augment your acoustic sound with the sounds available on any synthesizer, you can improvise on your kit and see the result on your computer screen in musical notation, or you can create your own musical compositions, playing every part from guitar, bass and keyboards to flutes, violins and trumpets.

If you're new to triggering, here are a few tips to help get you started.

Tip #1—Get your terminology under control. The term "trigger" can be confusing, as it is both a noun and a verb and is used to describe a number of different things. The small device that attaches to your drum is called a trigger (noun). When that device sends a signal to your Trigger-to-MIDI-interface (TMI), it is triggering (verb) the TMI. The act of having acoustic drums fire sounds through a MIDI-controlled sound generator is also called triggering (verb).

Tip #2—Understand that when you attach triggers to your acoustic drumset, you are no longer playing the same instrument. Instead, you're working with a brand new, more powerful, hybrid instrument. It may feel the same, but it sure as shootin' isn't going to sound the same! One of the strongest reasons to use triggering in the first place is to augment your acoustic sound with electronic drum sounds. To make the best use of your new hybrid instrument, you may need to slightly alter the tuning of your drums, the external muffling of your drums, your stroke or your playing style. Adding triggers may not

require a drastic alteration of your musical persona. But your triggering may be much more successful if you muffle your bass drum a little more, tune your toms a little higher, play a little stronger or use fewer ghost strokes. The key is to be flexible and understand that your new hybrid kit may require a little time and adjustment to feel and perform at the highest comfort degree.

Tip #3—Understand the function and features of each part of your triggering system. When you trigger from acoustic drums, you are interacting with a number of unique musical systems. Each individual system forms a symbiotic relationship with the other systems in the triggering. From the player's perspective, the first and most important system is the acoustic drumset. The second system consists of the triggers themselves. The trigger senses the vibration of the drumhead and sends an electrical spike out through a small cable. The next system that comes into play is the trigger-to-MIDI-interface, which reads the electrical signal from the trigger and outputs a MIDI message based upon a pre-programmed set of instructions. These messages flow out of the TMI over a MIDI cable. Following the TMI comes the sound module, which reads the performance instructions and outputs audio data. The final element is the sound system, which amplifies the signals from the sound module so that you can hear the result. In some cases, the MIDI data generated from the TMI might be routed to a computer for music notation or sequencing, or to a mixing console in a recording studio.

MIDI, an acronym for Musical Instrument Digital Interface, is a computer language defined in 1984 that allows various computer-based musical devices to communicate with each other. In short, the MIDI language is a series of instructions that describe the activity of a musical performance. Common MIDI messages describe the instruments, pitches, dynamics, rhythm, tempo and even stereo placement.

Tip #4—Experiment with trigger

placement. Many factors determine how well a trigger will sense your strokes. You may want the triggers to be more or less sensitive, depending upon your drums and your playing style. There is always a slight trade-off between sensitivity and "false triggering." As your triggering system increases in sensitivity, it becomes more responsive to subtle dynamic changes. However, this degree of sensitivity can cause a trigger to fire twice on a single stroke or fire when another instrument causes sympathetic vibrations of the head. Triggers track the vibration of a drumhead, and drumheads vibrate differently on a snare drum than on a tom or bass drum.

Most of today's trigger-to-MIDI-interfaces have built-in software that automatically adjust their internal signal settings between electronic pads, snare drums, toms and bass drums. Just tell the TMI that the trigger plugged into the first jack is a snare drum, and you're off to the races. But taking some additional care with trigger placement can enhance the feel and responsiveness of your system.

Snare drum triggers are most often placed directly on the drumhead, one-half inch from the counterhoop and away from your normal playing position. While there is some danger of hitting the trigger with your stick, this position offers the maximum sensitivity. If your snare drum playing includes ghost strokes and wide-ranging dynamics, try this position first.

Tom-toms require a little less sensitivity, as most tom-tom strokes are fairly strong. A very popular trigger placement for tom-toms is on the shell, about one-half inch below the batterhead counterhoop. This places the trigger close enough to the drumhead to read subtle vibrations from strokes. Since the trigger is not directly on the tom's head, it is less likely to give a "false trigger" due to sympathetic vibrations from the snare, kick, other toms or cymbals.

Bass drum triggers are difficult to control unless the drum has a certain amount of muffling. Try a moderately

muffled kick drum and tape the trigger directly on the head. Since the bass drum vibrates so heavily, the tape will help keep the trigger from vibrating off the head.

Tip #5—Take time to tweak. In order to get the best feel and response from your triggered kit, you'll need to spend some time optimizing or "tweak-ing" your system. This can be a time-consuming task, but once it is completed and you fully understand how all the various parameters come together, you shouldn't have to go through the entire process again.

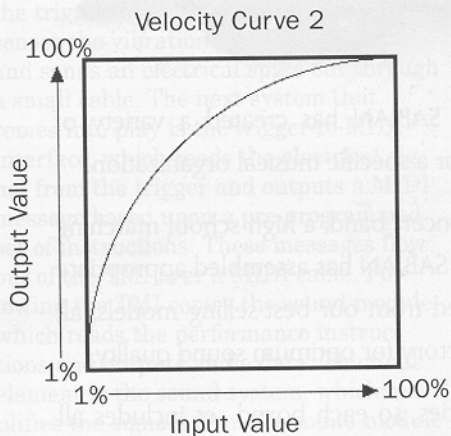
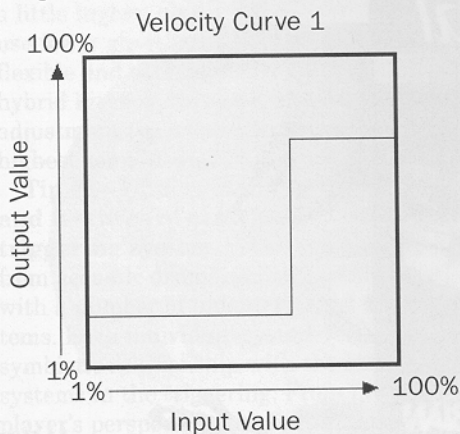
It is suggested that you find a large chunk of time that can be devoted to working with your system and trying to find the best relationship between settings. If you try to do this when you're in a hurry, you risk settling for something that may not be fully operational or may not give you the best possible response.

VARIOUS SETTINGS

Velocity Curve: The velocity curve is a relationship between a value coming into the system and a value coming out of the system. In the first velocity curve illustration, a TMI is programmed so that the velocity curve will only output two different dynamic levels. For illustration, the velocity curve is represented in a graphic format. In this example, as the player gets stronger and generates higher velocities, the output remains stable until a certain threshold is reached. At that point, the output will jump considerably, yet higher input level will offer no additional change to the output.

The second velocity-curve illustration shows one in which changes at low input levels cause large changes in output,

while changes at high input levels offer less change. This type of velocity curve would be well-suited for players with a light touch, as the majority of dynamic effect is available without pounding. One of the difficulties in dealing with triggering acoustic drums (and electronic percussion in general) is that there are velocity-curve settings on trigger-to-MIDI-interfaces and velocity-curve settings on most sound modules. Be sure to



experiment with both the interface and the sound module for the best result.

Rejection: Rejection controls typically tell the TMI what type of electrical signals from the trigger should be ignored. Rejection controls usually fall into two different categories: self rejection and other rejection. Self rejection assumes that a second electrical spike from a trigger isn't really a new stroke, but additional head movement from the first stroke. If this setting is too sensitive, you might get two or more triggered attacks from a single stroke. If this setting is not sensitive enough, you may not be able to play fast-moving passages, as the interface will ignore two quick spikes in succession. The "other rejection" controls are similar in nature, except that the TMI will ignore a second spike from the trigger from any input in the system. In other words, if the interface registers a spike from the floor tom trigger shortly after a spike from the bass drum, the unit will assume that the bass drum attack caused the floor tom trigger to fire; this is also called crosstalk.

Triggering from your acoustic drums can open up an entire new world of possibilities and take you into new directions that you never thought possible. Triggered drums can expand your horizons and give your performances a new life. Try these triggering tips, and have a wonderfully successful experience.

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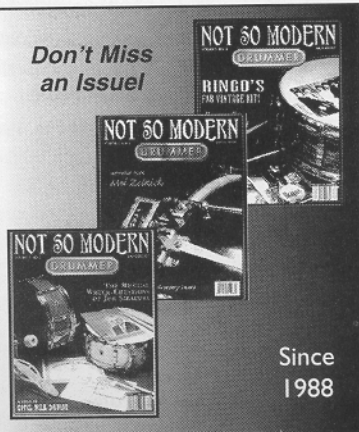
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