LARRY THE O

Rinse & Repeat

There's plenty you can do in Studio One to stop loop-based music being repetitive and dull.

Music just can't sit still. Even if you're working with repeating elements such as MIDI or audio loops, development of some sort is necessary to capture and keep listeners' interest. There are many ways of introducing variety when working with loops and samples, from switching between loops to triggering samples in real time on top of a bed. This month, I'm going to show you a real-time performance system that uses a few different methods of generating musical possibility.

Two of these methods make use of Impact, Studio One's bundled software drum machine. Drum machines are basically sample-playback engines, but they often include interesting triggering capabilities that can be fertile ground for creating variety.

Trigger Happy

Samples are triggered within Impact by clicking on pads. Up to six samples can be stacked on each pad, and there are several triggering options. Studio One's drag-and-drop capabilities make it easy to create a stack: simply drag a sample from Studio One's Browser onto a pad, then Shift-drag each of the other samples you want stacked and drop them on the pad. As shown in Screen 1, multiple samples stacked on a pad are indicated by a row of boxes at the top of the Impact window, below the pad name and above the sample waveform display. The number of boxes shows the number of stacked samples, and clicking a box selects one of the samples.

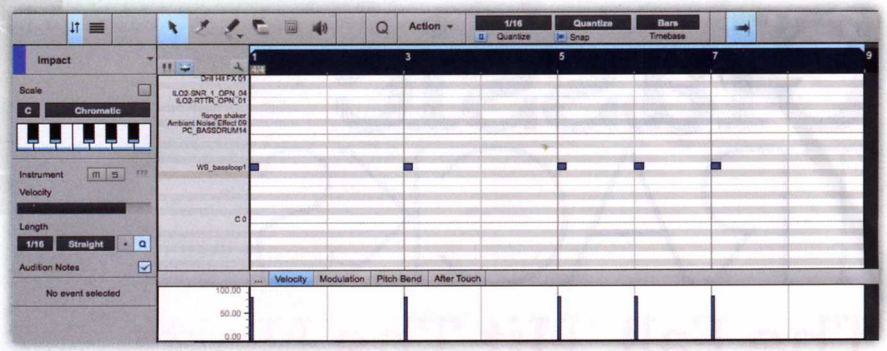
The most obvious way of using stacked samples is velocity switching. To do this with Impact, tap a pad to select it and set its Layer Mode to Velocity. In this mode, the velocity of a strike on a pad or keyboard controller determines which sample is played. This typically is used to play samples stacked so the sounds correspond appropriately to the velocity: low velocities play soft strike sounds, and high velocities play clobbering strike sounds. Note that samples cannot be rearranged to different velocity zones once they are assigned to a pad, so drop them on the Impact pad in order from softest to loudest.

This works well, but can be taken further. The simplest way to enhance them is by exaggerating the sounds. For instance, to velocity switch between tom hits at different dynamic levels, instead of having direct strikes on the drum at all of the levels, you could have the lowest-level sample be a soft mallet hit, while the highest level might be a flam hit with sticks. This produces wider variation in texture from softest to loudest hits.

Another possibility is to use entirely different sounds for each of the velocity-switched samples. With this approach, mapping samples into a useful playing arrangement becomes the most critical consideration. Hits with very low velocity values, say 0 to 32, rarely occur in most playing situations, so setting 32 as the first velocity threshold is likely to mean that sound will rarely, if ever, be played. Make the lowest velocity zone large and the highest zone small for more even frequency of triggering: for example, set the velocity levels of the zones as 0 to 63, 64 to 90, 91 to 117 and 118 to 127.

The sample stack on a pad can also be treated as a pool of sounds, rather than a stack. When a pad's Layer Mode is set to Round Robin, each successive strike plays the next sample in the stack, rotating continually through the stack. It can be fun for the samples to be entirely different sounds, but I find it most useful when the samples are variations on a sound, albeit with significant differences between them. A series of strikes on different metal objects, for instance, gives you the unifying aspect of all of the samples

Screen 1: Up to six samples can be put on each pad in Impact. Velocity zones can be edited, though there is no text readout of the exact velocity values. Layer Mode and Play Mode are crucial settings.



Screen 2: An eight-bar phrase with notes placed at one- and two-bar intervals. The samples these notes play are also one or two bars in duration. Since the Impact pad is set to select samples randomly, the track does not simply repeat the same way each time.

being metal strikes, and variety from the selection of objects.

The third Layer Mode is Random, which, as the name indicates, selects randomly from the samples on the pad. I often choose this mode when I use unrelated sounds on the pad. Since the samples are streaming, they can be long, if you like. In this case, pay attention to the pad's Play Mode. Of the four available modes, the two you will use most often are One Shot Mono, in which a second strike stops the current sample and starts playing the next, and One Shot Poly, which starts the second sample playing but allows the first one to finish, mixing the two samples together.

Odd Bar Out

Another interesting variation technique is one I call 'odd bar out'. I create a number of two-bar audio loops and a few one-bar loops. I put them on a pad and set the Layer Mode to Random and the Play Mode to One Shot Mono. On the instrument track containing Impact I insert notes for that pad on bar downbeats at either one- or two-bar intervals (Screen 2) . The entire phrase in the track might be eight or 16 bars long. When I play the track, each note randomly selects one of the loops, which will most often be two bars in length, but sometimes one. Meanwhile, the period of time the loop has to play also could be either one or two bars. This means sometimes a two-bar phrase plays for its full length, while at other times only one bar plays before another note triggers a different sample. A key aspect of making this work is the relationship between the content of the loops and the timing of the notes in the track. If the loops are purely percussive, then it only matters that the rhythmic phrasing is appropriate, but if there are pitched elements, there is potential for them to clash with a developing chord progression in the rest of the song.

Switch It Up

Another classic technique is to have multiple loops running continuously, each on its own track, and 'play' track mute buttons to bring them in and out at different times. You can define a hardware controller as an External Device using the Mackie HUI protocol and control mute buttons that way, but alternatively, Studio One's Control Link feature makes it easy to do this with switches that send generic MIDI Continuous Controller values.

I put three eight-bar loops on three tracks and a four-bar loop, duplicated once to get eight bars in total, on its own track. Then I set up my trusty Lexicon MRC so that its four buttons were sending out successive MIDI switch controller values (CCs 64-67). Being lazy, I cabled MIDI Out from the MRC into my Roland Octapad's MIDI In, instead of into its own MIDI In on my MIDI interface. This meant Studio One saw the MRC switches as coming from the Octapad, which presented no particular complications.

Screen 3: Four buttons are set to send standard MIDI CC messages that mute and unmute channels playing different loops.

Double-clicking the Octapad in the Instruments panel of the mixer opened the Device Controller Map for the Octapad (Screen 3) . I put that in MIDI Learn mode and pressed each of the switches on the MRC. This created four knob controllers on the Controller Map. Still in MIDI Learn mode, I right-clicked on each of the knob controllers and changed them to buttons. I expected the 'Button (on/off)' control to be the control I wanted, but it turned out that 'Button (press/release)' was what worked correctly. Once I exited MIDI Learn mode, I used Control Link to map these buttons to the channel mute buttons. That done, I could press one, two or even three buttons at a time and switch the loops in and out. Unfortunately, I could not toggle mute buttons from the Octapad because Studio One cannot currently map MIDI notes to the mute buttons.

Putting It All Together

Just because over-the-top is fun, I combined all of these methods, using the MRC, six pads of the Octapad, four stereo audio tracks and an instrument track. The instrument track, which was looped, had notes at one- and two-bar intervals playing an Impact pad set to Random. The four audio tracks held stereo loops, which happened to all be variations on the same rhythms and instruments. I switched these in and out with the MRC buttons. Two pads on the Octapad triggered Impact pads set to Random, one pad stacked with sound effects, the other with rhythmic loops at the song tempo. The other four pads of the Octapad triggered Impact pads with stacked short percussion samples, some of the pads being set to Random and some to Round Robin.

When I let the whole thing rip, the one/two-bar looped track gave me kind of a shifting bed, onto which I added the loops on the mute/unmute audio tracks, which I switched around every 32 bars or so using the MRC buttons. On top of this whole mess I played the Octapad. With a bit of careful arranging this is a rich setup for solo live performance, but techniques like these for creating variation, used individually or in combination, can just as fruitfully be applied to studio work. It's the spice of life.