

## Beat Making On The MPC2000XL

*This article is an excerpt from MPC-Samples' ebook release 'Beat Making on the MPC2000XL', by MPC-tutor. This book shows you, step-by-step, how to create beats using an Akai MPC2000XL and covers areas such as sample editing, sequencing, multitracking and effects.*

*This excerpt is actually two chapters from the book and covers everything you need to know about 'Chopping Samples'.*

*This tutorial requires the use of samples provided in the following download:*

<http://www.mpc-samples.com/demos/chopping-1-and-2.zip>

### Chopping Samples

Looping a drum beat is fun, but using that same 2 bar loop within your whole track can be pretty boring. By chopping up a break beat loop, we can create something unique, something that can change throughout the track. We can also get rid of vinyl pops and crackle by selecting only certain elements of a beat - and finally we can create some interesting special effects.

### Methods for Chopping Breaks

Why do we want to chop a break? Well, normally it's because we wish to use the drum sounds within the break and generally keep the same atmosphere and production associated with the break, but we need the break to either 'fit' into an existing sequence or we would like to change the groove or note order of the break. We may also wish to perform special tricks to the break or we may simply wish to extract a particular drum sound from the break to use in one of our own beats. Perhaps your break contains some nasty pops and scratches that you would like to remove, or maybe you just want to make a boring old 2 bar loop a little more interesting. There are lots of other reasons for chopping up breaks - for a start, it's a lot of fun and it can be a challenge to transform something quite familiar into something that sounds completely different.

So how do we go about chopping a break? Looking back at 012 'Editing samples Part 2', we came across the 'Section New Sound' function in the Sample Edit screen - this provides us with one method of chopping a break - this function allows us to select a section of a break and turn just this section into a completely new sample. So in theory, you could keep selecting different sections within your break and creating new samples from it. That's okay and we shall use this later to do some small chops, but our MPC has a quicker way of chopping an entire break into manageable chunks - the Zone function.

### Zone Function Overview

The MPC zone function takes any sample (it doesn't have to be a drum loop) and automatically creates separate sections or 'zones' within that sample, each one of these zones will eventually be a completely new sample in its own right. Each zone is completely editable using the same trimming techniques discussed

in previous tutorials. After creating your set of zones, they are automatically assigned to a new program (in running order) so you can immediately start creating a new groove out of them. The easiest way to see how the zone function works is to work through an example.

Load up the drum beat 'SIMPLE.SND' from the tutorial files and assign it to any pad. This beat has been trimmed and looped already for you using the techniques covered in previous tutorials. If you go to PARAMS in the TRIM screen you'll see that the loop is 4 beats long (1 bar) and is 63.9 BPM. Keep your finger on a pad and listen to the beat looping. It's a nice beat (you may recognise it), but it won't sound that good looped in its current state because that roll at the end will become very annoying after a while...

### In the Zone

Press the ZONE button (F3). This is the Zone screen, where we can slice our loop up quickly into smaller parts.



Looking at this screen shot, you can see that the name of the sample is shown in the usual place at the top left corner. To the right you will see the PLAY X parameter. Initially, this will be set to ALL. This means that when you press 'PLAY X' (F6) you will hear all of the sample. Highlight this field and jog wheel once to the right so it says 'ZONE'. This means that when we press PLAY X (F6), it will play only the zone we have selected within our sample.

Navigate so that 'Zone: 1' is selected. Now jog wheel to the right and you'll see the number increase - at the same time, the highlighted 'zone' within the sample also changes. What you are doing here is simply running through all the existing zones that our MPC has set by default. You'll see that there are 16. Go through each zone and press PLAY X to hear what each zone initially sounds like.

### How does an MPC decide where to place the zones?

If you've ever used the computer software 'Propellerheads Recycle', you'll know that Recycle analyses the peaks of the drum beat waveform and automatically slices your beat into perfect zones. The MPC on the other hand does not do this - in fact it is blissfully unaware of the exact position of your drum hits. The MPC simply takes the length of the sample and divides it into equally spaced zones. So if a sample was 1000 samples long and we sliced it into 10 zones, each zone would be 100 samples wide. This means that 90% of the time, we need to make some manual adjustments to the width of the zones as some drum hits will be cut off slightly.

With the 'Zone:' field still highlighted, press OPEN. Here you can change the number of zones available. Using the jog wheel or the number pad, change the number of zones to 4 and press DO IT. Now if you spin the jog wheel on the zone parameter, it will show all the zones available as being 4. As you can see, each zone is a lot larger now, as the beat has been evenly sliced into 4 rather than 16

zones. As this loop is 4 beats (or one bar) long (as shown in PARAMS) we can safely assume that each of these slices can represent one beat.

With Zone 1 selected, press F6 (PLAY X). This is what our first slice will sound like. Listen to the other 3, and you'll notice that Zone 3 is slightly cut off at the start. Looking at Zone 2, we can see that the start of the third beat is actually contained within zone 2. Why is this? Well most drum beats are played by real drummers. Real drummers don't play to a quantise template, they sometimes hit a snare slightly behind or ahead of the beat, giving the music some swing and feeling - and even the tightest drummers simply make the odd 'mistake'. When cutting up drum breaks recorded by real drummers it is quite common to find that certain hits don't 'line up' exactly on the beat. So, the MPC divides your loop into equal parts based on the number of zones you select. This is why some hits will get cut off and this is why you need to adjust your zones.

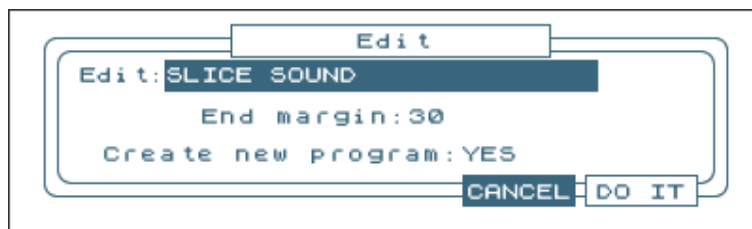
### Adjusting Zones

This is pretty simple. It's the same method as you would use in trimming, except this time you need to adjust the start and end points for all your zones instead of just one. Simply select a zone, then navigate to its start point, hit OPEN and trim to the start of the hit using your jog wheel - you'll only need to make a minor adjustment in most cases. Then go to the end point of the same zone, hit open and repeat the procedure. Lets adjust the zones in our sample now.

Go to Zone 1, and select the end point and hit OPEN window (we don't need to trim the start point for this zone as it is the beginning of the sample and we've already trimmed that when looping). The end point is currently at 41345, and as you can see, this is slightly cutting off the start of the next zone. Move the jog wheel until you are at the start of the hit, (around 41166) and return to the MAIN screen. Now zone 1 is perfectly edited and in the process, you've also made sure the start of zone 2 is perfectly trimmed. Select Zone 2, select its end point, and repeat the adjustment for this zone, making sure that the end zone of zone 2 does not fall on the drum hit that is supposed to be at the start of zone 3 (around 81710). Go through all 4 zones to make sure everything is as perfect as possible.

### Slicing

To finally slice your zones, hit EDIT. You'll get this following screen



Here you need to set your End Margin. Adding an end margin is supposed to help stop gaps forming in your sequenced beats due to the abrupt way that your slices get chopped. The end margin is actually 'borrowed' from the zone in front of that zone. Setting an end margin of '30' will actually take 30 sample points from zone 2 and add it to the end of zone 1. It will also take 30 sample points from zone 3 and add it to the end of zone 2 and so on. Only your last zone does not get anything added as there is no zone in front of it to 'borrow' anything from.

Unfortunately, this is not the ideal solution to the problem of cutting off the end of slices too abruptly - it leaves a small click at the end of each sample which can be noticeable in certain situations. We'll look at ways of overcoming this problem later.

Set your End Margin to 35 as this is a good compromise, and keep 'Create New Program' set to YES. This tells your MPC to create a new program out of your slices. Press DO IT, and the MPC slices your beat, creating a new program with your 4 slices on PADS A1 - A4. To see your new program you'll have to manually go into PROGRAM (shift 6) and select the DRUM number that is currently highlighted along the bottom row.

If you like, load up the 'simpleA.PGM' file from the tutorial files. This is my version of the chopped up beat (you can use your version if you wish). Play the pads A1 to A4 to hear your cuts/slices. You'll notice that the pad A1 chop has a small tick after it, don't worry about that for the moment, we'll deal with that later.

First, let's recreate our original beat within our sequencer. Go to a blank sequence and set the BPM to 63.9, set the timing to 1/8 and make sure that track 1 is assigned to the DRUM that your chopped beat is stored in. Now, remember that we chopped our break into 4 slices and our break was exactly 4 beats long - that means each slice is one beat. So let's place each one of these slices exactly on a beat.

In your 'Now:' field (top right of your main sequence page), you have 3 sets of numbers, 001.01.00, which we saw in previous tutorials represents the Bar (001), beat (01) and tick (00) position. So beat 1 is represented by 001.01.00. Beat 2 is represented by 001.02.00. Beat 3 is 001.03.00 and beat 4 is 001.04.00. So to place our zones 'on the beat' simply go into step edit and add our slices at these 4 points.

Make sure you are at the start of your sequence and press STEP (F1). Enter your first slice here (pad A1). Now navigate to 001.02.00. The easiest way to do this is to use the STEP cursors above the REC button - as your timing is set to 1/8, this involves press the right STEP key 4 times. Enter your second slice here (pad A2). Enter pad 3 at 001.03.00 and pad 4 at 001.04.00.

Alternatively, you can load the sequence BEAT1.MID from the tutorial files. Whichever sequence you use, press play - doesn't sound quite right, does it? Some of the beats seem to come in a little too late...

### **Why it sounds weird**

Remember that we had to adjust our zone positions earlier. We did this because our hits didn't fall exactly on the beat. To recreate our original beat, we cannot simply place all chops exactly on the beat, we would need to place some slightly before in this case, as the original drummer was playing slightly ahead of the beat - remember, drummers do not obey strict quantise points - this is what gives real drum performances their feel.

Load up BEAT2.MID. This time, I've placed the chops 2, 3 and 4 slightly behind the beat by setting the 'timing' field to 'OFF' and using step edit to place the notes in their new position. It sounds a lot better. Arranging the chops this way has kept the original feel of the beat - but let's look at a few ways of changing the original feel, and making a whole new beat in part 2 of this tutorial.

## Chopping Samples Part 2

*Take chopping a step further by changing the feel of a loop, and creating choppy break effects in the zone screen.*

### Changing the Feel

A common trick in dance music is to make the hits fall exactly on the beat - DJ's love music like this as they can beat match tunes together a lot more easily. Well, we tried placing all our chops exactly on the beat with BEAT1.MID, and it did not sound quite right. But let's go back to that same sequence, and this time we'll make the chops fit exactly on the beat - by doing this we will remove the 'ahead of the beat' feel, making the beat a bit more rigid, but perfect for beat matching.

A good place to start is trying to adjust the tempo of your sequence. Go back to BEAT1.MID which was the sequence we originally created where all the chops were 'on beat'. First off, if we listen carefully (try headphones) we can hear small gaps between each chop, suggesting that if we increase the tempo, things might sound a bit better. Try it at 64.5BPM (don't increase the tempo too much, it will sound strange). There's still a bit of a gap between the second and third chops, and it also sounds like the looping point comes in too quickly.

To reduce the gap between the second and third chops, we can try stretching the length of our second chop pad A2 - SIMPLE2.SND). By stretching it out, we will increase its length and thus remove the gap between it and the third zone. So how do we stretch out the length of a sample? Well there are two ways this can be done.

### Tuning

Remember from '014 Programs', we discussed the 'Tune' parameter on each pad. By decreasing this number we basically slow down the sample on this pad. Well, slowing down a sample results in a *longer* sample - so what if we tune down the sample on PAD A2? Well, let's try it. Go to Program (shift 6) and select pad A2. Press PARAMS (F2) and in the top right corner highlight 'Tune: 0'. Change this to -5 and press play on your sequencer. The sample is definitely slower, but at the same time, you can definitely hear there has been a change in pitch of this sample - it sounds lower compared to the other samples - mainly on the hi hat sound. This is always a problem with tuning samples like this. The solution is to tune *all* your samples down by the same amount - the problem this time is that this will tune down samples that were okay in the first place! There is a much better way to lengthen our samples, and it's called **Time stretching**. We'll look at tuning samples down in later tutorials as it does have some other interesting uses.

### Time Stretching

Time stretching lets us lengthen or shorten a sample without changing its pitch. This was a new feature for MPCs which until then, had to make do with the tuning method. Time stretching has its limitations, especially when trying to increase sample length - samples can start to sound metallic, but generally, this feature is a really useful addition to the MPC arsenal (although strangely dropped from the MPC1000).

First, set your Tuning in pad A2 back to 0. From here, press Trim (shift f5) to bring up our SIMPLE2 sound in the sample edit screen. Press EDIT (F5) and jog wheel all the way to the right - to TIME STRETCH.



The 'New Name' field is the name that the MPC will give your new time stretched sample. Whenever your MPC time stretches a sample, it creates a completely new sample (the time stretched version) and it leaves the original sample untouched. Leave this field as it is (our new sample will be called 'SIMPLE5').

The next field, 'Ratio' is the amount of stretch we wish to apply to our sample. Any number greater than 100% will result in a sample that is longer than the original. Any number less than 100% will give us a shorter sample. Normally, we find that time stretching more than 110% gives a metallic sound - it's always best to time stretch as little as possible to achieve your goal.

Initially try a ratio of about 101.50% for a subtle stretch (use either your jog wheel or number pad to change this).

The third field is our 'Preset' field. Change this field to match the type of sound you are time stretching. When it comes to drum sounds, you have several choices - you could choose any of the RHYTHM presets and any of the PERCUSSION presets. For general drum loop processing I tend to use the PERCUSSION time stretch preset, although it doesn't hurt to try alternatives as each preset will act slightly differently and you may get a better result with another. You'll notice that each preset has 3 versions - A, B and C. A is the lowest quality, C is the highest (although it takes longer to process). For a short sample like this, the processing time is not an issue so set it for best quality, C.

The final parameter is 'Adjust'. This allows you to tweak the time stretch preset a little. If after processing, things don't sound quite right, you should try changing this value slightly - increasing its value is supposed to help high frequency sounds, while dropping this value results in improved bass stretching. For the moment, leave this at 0.

Press DO IT. Once the sound has been processed, you'll be taken back to the trim screen and your new sample will be displayed - have a listen to the result. When I did this, I found the sample had gained a metallic sound so I decided to scrap this sample and deleted it (highlight the name in the top left, OPEN, DELETE, DO IT).

I repeated the entire process again but this time set the adjust to -36 and I found the resulting sample sounded a lot better. This can be really hit and miss so have a little patience. Of course, not only does our sound have to sound right, it also needs to fit into our sequence properly.

So, we now have a slightly longer version of SIMPLE2.wav called SIMPLE5.WAV. Hopefully, this will help fill the gap between chops 2 and 3. Go to PAD A2 and replace SIMPLE2 with SIMPLE5, and press play. That sounds a lot better. Of

course in practice, you may need to try a few different time stretch percentages until you find one that fixes the problem, it's all about trial and error - and patience. If you are dealing with a longer sample that will take your MPC a long time to process, I suggest you choose the 'A' version of the time stretch preset until you find the length you require (remember 'A' presets are low quality but processed a lot faster), then make a 'C' version for final inclusion.

### Fixing the end chop

We still have the problem of the end chop. If you listen carefully, it sounds like the loop point comes in just too fast - this is because our end sample is too *long*. If we shrink our last chop, hopefully this will solve this problem (stretching this chop will only make things sound worse).

Select SIMPLE4 in your program and press SHIFT and 5 (TRIM). This will take you to the editing page. Press EDIT and select TIME STRETCH. This time I first selected 98.50%, a decrease in length of 1.5%. But when I replaced the original SIMPLE4 with this new sample (SIMPLE6), it wasn't short enough. So I erased this and tried again, this time using 97.57%. The result was a lot better. To hear it, load up SIMPLEB.pgm and play it through sequence BEAT3.MID. (this is simply BEAT1 at 64.5bpm).

So, now we have 2 ways to chop a beat. The first was to keep the original feel, the second has created a slightly new feel (including an increase in speed). This second way, with our drum hits falling exactly on the beat leads to much easier beat manipulation and leads us to the next example.

### Chopping it further

From now on, we shall be using the 4 chops in our SIMPLEB.PGM program, so I suggest removing the unwanted chops from memory (i.e. remove SIMPLE2 and SIMPLE4). Now create a new program and call it SIMPLEC. We are now going to take each chop, and start to chop it down into smaller chunks. We'll start with SIMPLE1.

In the TRIM screen, select SIMPLE1. Press a pad to hear it - it's got a click on the end - we'll remove this click later. Let's now cut this slice into two. We could use the zone function for this, but this time, we'll use SECTION NEW SOUND. Using the slider and shift, move your end point roughly to the start of the second kick in this sample.



Now, with the end point highlighted, press OPEN and fine edit the end point so that the start of the next kick falls just to the right of the edit line (around 20986).

Press EDIT and jog wheel to SECTION NEW SOUND. Call the sample SIMPLE7, and press DO IT. Assign this sound to pad A1 in your program - pad A1 now has

a single hit which is made up of an open hat and a kick drum laid on top of each other. Return to SIMPLE7.

Now move your start point to the start of the second sound (a quiet kick + hat laid on top of each other), and repeat the process of creating a SECTION NEW SOUND. This time, set your end point before that horrible click on the end so it gets removed when we create our new sound - I set the start point to 20630 and the end point to 41198. This time name the sample SIMPLE8 and assign to PAD A2. We now have a double hit on pad A2 consisting firstly of a kick with a hat laid on top of it, followed by another kick shortly after it.

Now repeat this process for SIMPLE 5 (remember to remove the click on the end). Split this sample in half, which should leave you with a snare (with a hat laid on top) and a double hit of a hat followed by a kick. Assign these to pads A3 and A4.

Do the same for SIMPLE 3. For SIMPLE6, slice the beat into two parts, the first part being the kick/open hat and the second part being the snare roll with the kick at the end.

Once you've chopped all your new slices make sure you've assigned them all to your SIMPLC program and save it to disk - I've included my own version of this - it's in the tutorial files, and is also called SIMPLC.pgm.

In its current state, you could start experimenting and making new beats with these chops, so feel free to do so. But wouldn't it be good if we could split all our chops into the smallest pieces possible? Well, there's nothing stopping us (except patience!). Using the exact same techniques we used in the previous example, take each one of your new slices and chop it down to the individual hits. Assign each of these hits to a new program and call it SIMPLD. You may like to load up my version from the tutorial files (also called SIMPLD.pgm). Each pad contains a single hit; apart from pad A13 which contains a little roll I thought would sound good intact.

The first thing you may notice is that I've renamed all the samples. I'll talk about this naming convention in later tutorials when I introduce pure and impure kit templates, but for the moment, you can probably work out that 'KH1' refers to a 'kick with a hat laid over it' while K1 simply refers to a 'pure kick' sound.

Load the sequence BEAT4.mid to hear a sequence I created using this program. It sounds very different to the original loop - a different tempo and a completely different groove. Straight away you can see the advantage of chopping your break into individual hits - you are no longer limited by the original performance, but get to keep the sound and production in your new beat. You can change the tempo of your beat quite easily just by adjusting the sequence tempo in the main screen using the jog wheel. One downside to this method is that you can't really *slow* your beat down any slower than the tempo of the original loop, as you'll start to hear the gaps between the chops. But you can certainly speed it up no problem, as I did in BEAT4 (63.9 to 86.5BPM). Just remember that if you use the roll sample on pad A12, you must time stretch this to make it shorter otherwise it will not fit properly.

### **Using only your best samples**

If you look at BEAT4, you'll see that I only used one hi hat sample even though there was two that we salvaged. This was because the second hi hat sample (CH2 on pad A7) sounds a bit duff - it has a bit of bass reverberation running through it



and it also sounds quite clicky. But that's the beauty of this method - you can pick and choose the best samples and ignore the bad ones. Of course, it's nice to have several variations of the same sample to make our beat a little more interesting, but we'll look at drum programming in more detail within the Drum Manipulation section of the book where we will also look at ways in which we can change these drum sounds, beef them up, recreate timbre changes and build our own drum kits.

## Choppy, Stuttering Loops

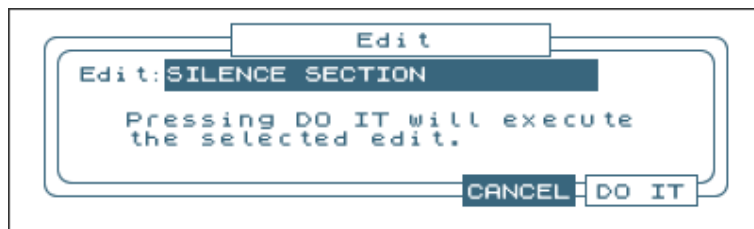
If you like DJ Shadow, here's an effect that you may hear on some of his tracks. A stuttering effect is very easy to make with an XL, but can sound pretty effective. It uses the fact that within the zone screen, you can take any slice and perform an edit to that particular slice only (while leaving the rest of the sample intact).

Load up 'STUTTER.snd' from the tutorial files. Press TRIM (shift and 5) and then press F3 to go to the ZONE screen.

We want to slice our sample as many times as possible, so we'll leave it set to the default number of zones, 16. Go to the top right of the screen and highlight 'PLAY X' and use your jog wheel to change this to 'PLAY X: ZONE' - this means whenever we press 'PLAY X' (F6), it will play our selected zone.

The first thing to do is to make sure all our zones are set correctly. We've covered this already in this tutorial, so I'll assume you are comfortable doing that now. Once all the zones are set, you'll have 16 little chops to play with.

What we're going to do is select alternate chops and mute them. This can be done using the 'SILENCE' function available in the EDIT screen. First highlight ZONE 2 and press EDIT (F5). This will, by default bring up the SLICE SOUND page, but we do not want this screen - jog wheel three notches to the left so that you are in the SILENCE SECTION screen



To silence this slice only, simply press DO IT. This will return you to your ZONE screen and you'll see that ZONE 2 appears to be blank. Press F6 (PLAY X) and you'll hear nothing.

Now continue to do this for every other slice - i.e. 4, 6, 8, 10, 12, 14, 16. Once you've muted all these zones, just hit your pad and the break will play from start to end, stuttering away quite happily. To hear my version, load up 'STUT2.snd' from the tutorials folder.

## Using the Edit function on Zones

The above example has shown us that you do not have to wait to edit your zones until you've actually performed a SLICE SOUND edit. You can perform any of the

options in the EDIT screen on any slice and it will instantly change your sample within the zone screen (but only for that particular zone).

So, why not reverse a single zone? As above, all you need to do is highlight a single zone (try zone 5, which is a snare), press EDIT (F5) and jog wheel to the REVERSE SECTION screen. After pressing DO IT you'll have a reverse sample for zone 5.

Equally, you can perform a timestretch on individual zones, or you can even use the DELETE SECTION screen to physically remove a zone from your sample. Be careful with this though - by removing a slice, you'll change not only the BPM of your beat, but you'll also change the time signature (i.e. there will no longer be 4 beats to a bar as you just removed one of the beats!)

Obviously the main problem with this method is it's a little bit 'final' (no 'undo') and you can't move samples around (i.e. after performing the reverse edit, you'll hear that the reverse sample needs a little nudging for it to keep in time with the beat). This is why I prefer to slice the samples into a program and then I have a lot more control over each individual sound and it's placement in the beat.

That's it for this excerpt of Beat Making On The MPC2000XL. What's next?

Review the book's table of contents (PDF) to find out exactly what's included:

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