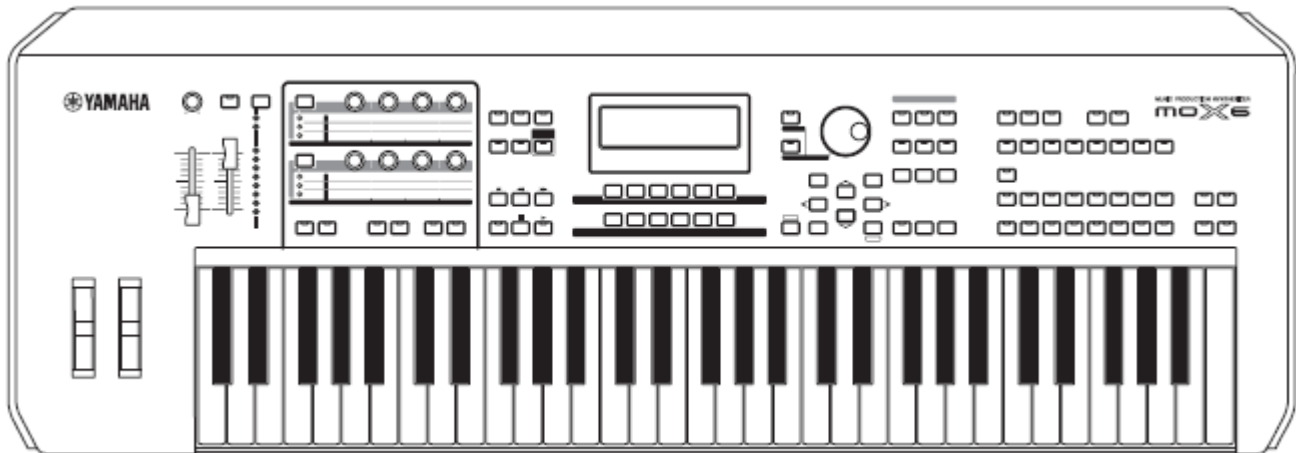




# MOX6 / MOX8

## POWER USER Drum Track Construction



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The MOX6/MOX8 offers a wide variety of tools for Drum Track Construction. Although there are no strict rules about how you go about composing your musical composition, it is a fairly standard practice to begin by building the tracks up from the bottom up. This often means constructing a basic drum groove on which to build the composition. This drum groove can be very basic at first – serving as a metronome or guide, then later you can refine it by adding fill-ins or creating variations so that your drums don't sound the same all the way through the composition. You can get as deep into it as you desire. This article is not meant to dictate how you should work, but is intended to make you aware of some of the powerful tools at your disposal. Read through it and I am sure you will discover something that might be of use to you at some point in using the MO-X.

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## What is a Drum Voice and how is it different from a Normal Voice?

A MOX6/MOX8 Drum Voice is an extra special Voice. If you are new to Yamaha synthesizer workstations, you may have never encountered a Voice architecture quite like this before. It is important to understand how this drum kit Voice works.

Just as there are "normal" musicians and *then* there are Drummers, the Drum Voice is also very *special* case. Typically, a Normal Voice will consist of just a single instrument, like a Piano, a Guitar or a Flute, although sometimes you might find a combination VOICE like "Piano & Strings" or a String Ensemble or Horn Section. The Drum Kit Voice is actually a combination of up to 73 **individual** instruments. Each KEY on the keyboard (C0~C6) is an independent instrument. You most likely have never run into a drummer with a 73-piece kit! But that is just what you have here in the MO-X. Each key has a different drum or percussion instrument with its own set of parameters that you can manipulate.

A traditional "drum kit", in music history, is a 20<sup>th</sup> century invention first used in Jazz... called a "Trap Kit" (short for "contraption" – what someone called it when they saw how it was pieced together out of individual components). But prior to the jazz 'trap kit', drums were very much played individually and still are played individually in many instances. Think of a marching band. You have several people carrying single Bass drums, and even more carrying just a single snare. And some other who carry just a pair of cymbals... they are indeed individual instruments. And on Yamaha synthesizers the Drum Kit Voices is made up of 73 Elements.<sup>1</sup> The way Yamaha constructs the Drum Kit Voice is so that you can place any drum and/or percussion instrument waveform into a Voice – typically each sample is on a separate KEY, between C0 – C6. Each KEY can have its own group of vertically stacked samples (when we say 'vertical' this is describing a velocity swap<sup>2</sup>). Each KEY has its own

<sup>1</sup> An Element is a multi-sample recording. In drums, the multiple samples are stacked vertically only to a single key for velocity triggering – where in a so-called 'normal' Voice they could be laid out both across the keyboard (horizontally) and vertically.

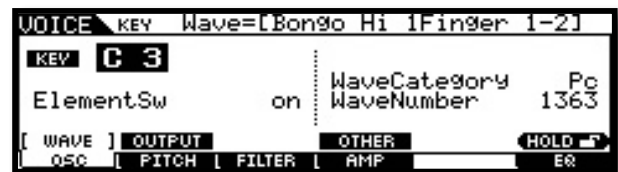
<sup>2</sup> A velocity swap will mean that as you increase the speed at which a key is struck you will switch between samples. For example, call up the **Power Standard Kit 1** play the snare drum mapped to E1. As you increase the velocity you will hear it switch between five different snare drum samples; the closed high hat on F#1 will switch between four different samples.

Volume, pan position, filter, envelope, EQ, routing to the Effects, Pitch Control, etc., etc.

A Drum Kit is like 73 VOICES combined in one. This allows you a great deal of flexibility when creating your music. Each KEY can be selected and edited individually. You can even assign your own favorite drums into your own USER KIT – there are 32 USER Drum Kit locations. This is useful when the snare you like is one kit and the kick you like is in another. Drum Key edits and assignments are accomplished in VOICE mode (or while you working in the Sequencer modes).

- Press [EDIT]
- Press the numbered button [1] to view individual KEY parameters.

You will see "**VOICE – KEY**" in the upper left corner of the screen. Now when you touch a key on the keyboard, its information will come to the screen. There are five tabs available: [F1] Oscillator, [F2] Pitch, [F3] Filter, [F4] Amplitude, and [F6] EQ. We should mention that sometimes a particular drum or percussion instrument is mapped to several keys – each might be a different articulation or gesture used in playing that instrument. For example, the hi-hat is typically mapped to F#1, G#1 and A#1 (Closed, Pedal, and Open) – three different articulations of the hihat cymbals. As we'll learn: Only one of these articulations can be sounded at a time.

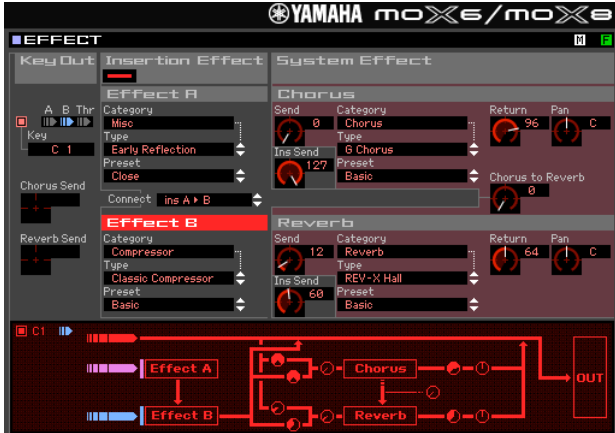


**[F1] OSC (OSCILLATOR)** – On these screens you'll find the currently selected KEY, an Element ON/OFF Switch, the WAVE selection parameters (Bank, Category, Number), the Assign Mode (single/multi), Receive Note Off, Alternate Group, and the Effect routing.

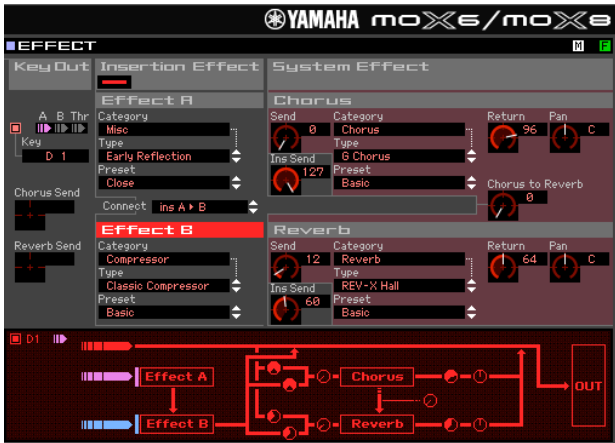
[SF1] WAVE: Turning the "Element Switch" parameter to OFF will deactivate a drum KEY. One right side of the screen is where you select a Waveform by Category and Waveform Number for each KEY. There are 2,670 Waveforms.

[SF2] OUTPUT: This parameter determines if the Drum instrument is going to the kit's assigned Insert Effect, **or** to the MIXING's assigned SYSTEM Effects (Reverb and Chorus) **or** just THRU (neither). The Effect routing is per drum (KEY). A drum can be routed to the System Effects (Reverb and Chorus blocks) **or** it can be routed to one of

two Insertion Effects selected for the kit. When a drum is routed via the Insertion Effect Output it is **removed** from the System Effects. When a drum is routed to an Insertion Effect it will arrive at the main drum kit output but it will have the Insertion Effect present. Any two Insertion Effects can be assigned to a Drum Kit Voice. They are treated in "parallel" or routed from "A-to-B" or "B-to-A". "Parallel" means each Insertion Effect is separated and a drum can go through one **or** the other. The "A-to-B" and "B-to-A" routings are what is called "in series" (one after the other).



- In the screen shot above we see a DRUM KIT Effect routing flow chart (from the MOX6/MOX8 Editor). The "KEY OUT" parameter in the upper left corner indicates we are looking a KEY "C1" (a Kick Drum) which is routed to INSERTION EFFECT B (blue) which is a "Classic Compressor".



- In the screen shot above we see another DRUM from the same KIT. The "KEY OUT" parameter in the upper left corner indicates we are looking the KEY "D1" (a Snare Drum) which is routed to INSERTION EFFECT A (purple) which is an "Early Reflection", then to the "Classic Compressor".

[SF4] OTHER: Any KEYS placed in the same **Alternate Group** will replace the playback of any other. This is how the Closed High Hat (F#1), Pedal High Hat (G#1) and the Open High Hat

(A#1) replace each other. And is how the Mute Triangle stops the Open Triangle. The "RcvNoteOff" (RECEIVE NOTE OFF) parameter is an important one to understand about drum sounds. You will notice that for most every drum sound this is set to OFF. This is what separates drum and percussion sounds from "normal" musical sounds. In a normal musical sound you hold the key down until you want the sound to stop and when you let go KEY-OFF is sent and the sound moves immediately to the RELEASE (time) parameter of the Envelope. Well with drum sounds you do **not** HOLD the key down to play the entire envelope of the sound. You want the entire drum to sound without having to keep your finger on the key.

In order to get a full understanding of this parameter, press the Crash Cymbal on note A2 (the "A" just below middle "C") and then do the following:

Set the RECEIVE NOTE OFF parameter ON.

It now will behave like a regular keyboard sound... meaning as soon as you release the key the sound will stop. This can be useful in creating a "choked" cymbal. You can quickly see why drum and percussion sounds require this parameter – you do not want to have to hold down keys in order for the instrument to complete its sound 'envelope'. The word *envelope* is used in synthesis to describe how something changes over time. In this case we are referring to the amplitude envelope (or loudness) – how the loudness changes over time.

**[F2] PITCH – Coarse and Fine Tuning for each KEY;** how the pitch of the drum responds to changes in velocity.

**[F3] FILTER –** Each Drum has it own filter. Basically a Low Pass Filter with programmable Cutoff, Resonance, Velocity sensitivity percentage and High Pass Cutoff parameter. Why a filter is important on synthesizers is to alter the fundamental tone (harmonic content) of a sound. In general, the more energy you put into playing (attacking) any acoustic instrument the richer it becomes in harmonics (see the article on EQUALIZATION for a discussion of harmonics). A Low Pass Filter, literally, allows the low frequencies to pass as long as they are below a particular "cutoff" point – this *cutoff frequency* is where the filter starts to attenuate (lessen) the loudness of certain harmonics. If you apply velocity sensitivity to a LPF, this means the harder you strike the key the more harmonics that will be allowed to pass... The faster a key goes down the higher the cutoff frequency moves – thus allowing a brighter, richer harmonic sound. This very much

mimics what happens in the acoustic world: The harder you play, the richer the tone is in harmonics. This is again, programmable **per** drum in a drum kit.

The High Pass Filter Cutoff frequency parameter allows high frequencies to pass and therefore attenuates lows. This is useful when you wish to remove low tones from a drum sound. As you increase this parameter you will reduce low frequencies in the sound assigned to this key.

**[F4] AMP (AMPLITUDE)** – Each Drum has its own amplitude envelope. Here you can also find PAN, ALTERNATE and RANDOM PAN options. Amplitude is how loud a sound gets and more specifically in the case of an envelope – how the loudness changes over time. All percussive instruments are hammered or struck in some fashion. This causes what is referred to as a “transient peak”. Simply put, a loud spike at the time of the attack, the sound then decays slightly and the body of the sound continues before it disappears completely. Think of a bass drum being struck by a mallet... now think of the whole process in extreme slow motion. There is the click of the mallet as it initially contacts the drumhead. There is a rapid spike in loudness, this is shortly followed by the booming response of the drum as the head starts to vibrate and is enhanced by the shell (shape) of the drum. CLICK → BOOM. The click is a peak, the boom is somewhat softer and somewhat later in time... and finally the sound disappears. That is what the ATTACK, DECAY1 and DECAY2 parameters are all about.

**[F6] EQ** – Each Drum has its own Equalizer. This device can be configured as a 2-band EQ, single band Parametric EQ or act as a straight level boost (+6dB, +12dB or +18dB). Being able to equalize (balance the tone and loudness) of each individual drum is extremely useful in getting the exact sound you want from your drums. Use this equalizer when you want your KICK drum to boom or you want more snap from your snare. In other products you only have an overall equalizer (if you get that)... in the MOX you have individual equalizers for **each** Element... repeat – you have individual equalizer for **each** Element. There are 73 Elements in a Drum Kit VOICE; 8 Elements in each Normal VOICE.

You may wonder why a 2-band and a single parametric EQ (instead of a three band, four band, five band or a graphic EQ)... The reason is it is assigned to a single drum sound. In any percussion sound there is “the cause” (the CLICK as the mallet strikes the drum head) and “the response” (the BOOM as the drum’s size creates the low thump)... 2 bands is more than sufficient for a single drum/percussion sound. A single band

parametric (parametric means you can zero in on a specific frequency, boost or cut and control how wide an umbrella above and below is affected) is perfect for Element equalizing when you need to fix a specific tonal region.

## **Recording a basic drum loop in the SONG mode**

In the MO-X you can use the 1900 drum type arpeggios to build your tracks. But it is also possible to record your own original drum tracks. PATTERN mode is the looping mode and is ideal for drum Part construction. However, if you’d like you can take a drum phrase you have recorded and set it to loop while you are working in SONG mode (the linear mode). The MO-X has a new feature that allows you to set a phrase to loop in SONG mode. This feature is extremely useful when you are writing a composition in Song mode and wish to play along to a basic drum groove, rather than just simply playing with a metronome. Often a drum groove can give a better “feel” for what you want to accomplish. This is particularly true on the MO-X with its very adjustable library of arpeggio pattern Types – there are over 1900 drum grooves, all fully adjustable as to “feel” and “attitude”. Therefore you may want to temporarily assign a drum groove to cycle while you are recording “linearly” in SONG mode. Later you can go back and construct a more complete drum track adding fill-ins and variations.

From the main Song screen press the [F3] TRACK and then [SF3] TR LOOP (TRACK LOOP). Here you can set any track to loop from measure 001 to any measure (over and over). See page 99 of the Reference Manual for details. There is a loop icon – when showing this will indicate that the track is set to cycle. The LOOP will always be from measure 1.

So say you record the first four measures with a drum kit, you can then set measures to loop continuously by setting the LOOP On while the MEASURE COUNTER shows Measure 004. This will loop the first four measures.

### **Workflow:**

- Record or import 4 measures of a drum groove
- When you have completed this, advance the measure counter to Measure **004**.
- Press [F3] TRACK
- Press [SF3] TR LOOP
- Highlight your track and turn LOOP = ON
- Press [INC] or [ENTER] to confirm

The loop can be set to start at measure 001 and continue through any particular point in the composition. This is designed simply and specifically for **working out** ideas. This looped drum groove is taking the place of the metronome and is by no stretch of the imagination useful as

your finished drum track (no more than letting a metronome tick away during your song would be). The reason is it will not do anything but repeat – it has no instructions other than that. The drummer will loop forever paying no attention to the song form.

The SONG LOOP function is here as a ‘working tool’ and you will probably finalize a complete drum track before completing the SONG. It is extremely useful when you want to play along with drums as opposed to just the click of the metronome. You can use the **arpeggiator** or the MOX6/MOX8 **PATTERN** mode to create specific drum measures to *finalize* a complete drum performance.

### **Recording your own original drum Pattern**

You may opt to use PATTERN mode for drum track creation. Pattern mode itself is designed around how old-style drum machines worked.<sup>3</sup> That is, you have a set number of measures that will automatically loop and allow you add data on each pass. This became very popular as most drum machine purchasers where not drummers, and therefore needed multiple passes to complete a complete sounding drum pattern. Loop recording makes it so much easier to record drum and percussion parts. Also memory on early drum machines was extremely limited. You could record a maximum of 1 or 2 measures at a time... then you linked (chained) those short patterns together to make a drum composition.

You can record by overdubbing (adding while listening to what you have so far) as the phrase cycles around. If you have never played drums before, not to worry... programming drum grooves from a keyboard is not for everyone. But you may find that you have an undiscovered talent for it anyway.

Drummers are not even aware sometimes that they make the best drum **programmers**, because there is such a thing as “thinking like a drummer”. The most convincing drum grooves are those that sound as if they could actually be played.

The **principal** keys (notes) for the basic drum kit are found between C1-B2 on the keyboard. There you will find a kick or bass drum, several different permutations of snare (full, sidestick, handclap), toms, high hats, rides, crashes, tambourine, vibra-slap and cowbell. Above this you will get into full on percussion and other miscellaneous stuff. Below C1 you will find alternate kicks, snare rolls, brushes, etc. A list of the drums and how

<sup>3</sup> You are not limited to just drums, however.

they are mapped to the keyboard can be found in the MOX6/MOX8 DATA LIST (PDF).

The more you listen to good drummers the more you will be able to effectively program convincing drum grooves. One word of advice though, nothing says you have to emulate real drums but remember a drummer has only four limbs that they use for playing the kit. They only use two sticks and have only two feet (in most cases)... so if you have toms rolls, snare hits, high hats, crashes and rides all happening at once, just remember you have created a *science fiction* “virtual” drummer. Good and great programming leaves the listener unconcerned (and unaware) that it is not a real person sitting behind a real kit.

If you have no talent for programming your own drums, remember the MO-X comes with more than **1900 drum patterns** in the arpeggio section. Up to six different arpeggio types (grooves) can be assigned to the [SF] buttons for quick access. You can record while activating the different arpeggios so it is easy to outline a track with fill-ins and transitions.

Go to PATTERN mode and assign a drum kit to Part 1 of a blank pattern.

- Press [MIXING]
- Press [ARP EDIT] - the dedicated [ARP EDIT] button (located to the left of the screen next to the ARP ON/OFF button)
- Press Track [1] to view PART parameters
- Press [F3] MAIN



- Set the SWITCH = ON
- Set HOLD = ON
- Set CHANGE TIMING = MEASURE
- Press the main [ARP ON/OFF] switch to activate the arps – located to the left of the dedicate [ARP EDIT] button.

This will allow the ARP to play the drums when you touch a key. You will not have to **hold** down a key manually and when you do change arpeggios they will change at the top of the next **measure** (quantizing your button selection – making the transition between arp types flawless).<sup>4</sup>

<sup>4</sup> Not all Patterns will work with each other musically speaking – so you will have to decide if types should be selected together. Just because two grooves are the same tempo does not mean they belong in the same composition.

Press [F2] TYPE – here you can select the different arpeggio types (patterns) by Category/Number.



In general, the name of the selected ARP TYPE will appear on the top line of the screen. You will see a two-letter prefix (as part of the ARP name) that will give you a clue about what type of drum groove you've selected. "MA" for example, is a Main "A" section groove, "MB" is a Main "B" section groove. "M" for main and the letter following is degree of complexity with "B" being more complex than "A", "C" being more complex than "B", and so on.

"F" as a first letter is for Fill-in, "I" is for Introduction, and "B" as the first letter is a Break. But this is in general, you can use whatever you want wherever you want – after all, it is your music. Simply pick the drum arp type by ear – not necessarily by is suggested by the prefix.

At the bottom of the screen you can select from the more than 1900 "DrPc" category Drum and Percussion arpeggio TYPE – listed between #3869 and #5804.

As a quick example let's setup 6 arp types:

- Press [SF1] ARP1 and assign:  
Bank = PRE  
Category = DrPc  
SubCategory = <Rock>  
Type = **3869** "MA\_Standard Rock"

In turn assign the following:

- Press [SF2] ARP2  
Type = **3870** "MB\_StandardRock"
- Press [SF3] ARP3  
Type = **3871** "MC\_StandardRock"
- Press [SF4] ARP4  
Type = **3872** "FA\_StandardRock"
- Press [SF5] ARP5  
Type = **3873** "FB\_StandardRock"
- Press [SF6] ARP6  
Type = **3874** "FC\_StandardRock"

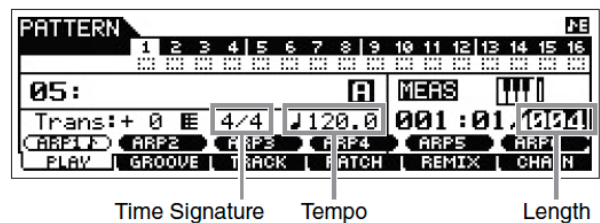
Activate the main [ARPEGGIO ON/OFF] button.

You can hear that #3869 (MA) is like the verse, and #3870 (MB) the drummer opens the groove to the ride cymbal (chorus), and you can use #3872 (FA) as fill-in to transition between the

main A and the main B grooves. And you can use #3873 (FB) to transition between the main B and main C grooves #3871, etc. That is how it is designed to work... but you do not have to do this at all – just file that away in your memory banks. There are no rules about using any of this. You can decide to use a Fill-in as a main groove – it's your music.

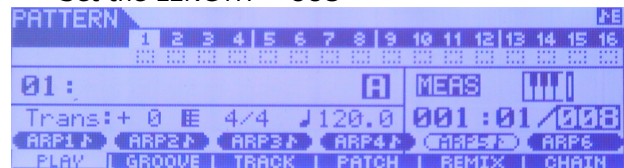
When you press RECORD, you record yourself making these types of transitions, you simply press [F2] ARPEGGIO, and you are given access to the [SF] buttons controlling the arpeggio types. You can interactively recall Fill-ins and move from arpeggio to arpeggio. For example, say you want to create an 8 measure VERSE Section for SECTION [A] where in measure 8 there is a fill-in:

You can accomplish this by starting with [SF1] ARP 1 and record through measure 7... **during** measure 7 press [SF4] ARP 4. The arp will switch at the top of measure 8 creating the fill-in. It is a good idea and is recommended that you turn **LOOP OFF** when you record arpeggios to PATTERN mode – this is so that the sequencer STOPS automatically at the end of the LENGTH you have selected. It will automatically loop on playback.



With a Drum Kit assigned to PART 1, try this:

- Call up a blank PATTERN
- Move the cursor right as far as it will go to highlight the **LENGTH** parameter
- Set the LENGTH = **008**



- Press [RECORD]
- On the [F1] SETUP screen make your initial PATTERN mode settings for TEMPO.
- Set LOOP = OFF
- Set QUANTIZE = OFF
- Set the TEMPO to **100.0**
- Press [F3] ARP ED> This will take you to the ARP Edit parameters.
- Press [F3] MAIN to set the PART ARP SWITCH = ON and HOLD = ON. Here you can even play with the timing and feel (Swing parameters) of the arpeggio data.

- At [F4] LIMIT you can set the range of notes that will trigger the start of the drums
- At [F5] PLAY FX – you can set the attributes and behavior of the arp pattern itself (more on this below).
- Press [F2] TYPE to check the assignment of the ARPS to the [SF] buttons
- Press [F1] COMMON
- Set the (ARP) SWITCH = ON
- Set the **SYNC QUANTIZE VALUE = 120**

This parameter will not quantize the notes of the pattern, but will ensure that your arp pattern **starts** correctly - **on the beat**. To transfer the arp pattern to MIDI Track events you will need to hit the RECORD > PLAY buttons to start the count-in, and then trigger a note on the keyboard to initiate the ARPEGGIO. This quantize setting (SyncQtzValue) will allow you to be anywhere within a 16<sup>th</sup> of the downbeat, the MO-X will correct the timing so the phrase begins properly on measure 001, beat 1, clock 000 precisely. If you are late triggering the start of the arpeggio pattern, then the data will be shifted late on the event list.

- Press [EXIT] to return to the RECORD Setup screen
- Press [>] PLAY to start the Pattern count-in (default is one measure).
- Touch any key to begin recording

The arpeggio data will begin play and the transfer from arpeggio to event data is taking place as you listen.

- Watch the screen MEASURE:BEAT counter
- During measure 007, press [SF4] ARP4 to trigger the Fill-in to start at the **NEXT** measure 008.
- The Fill-in will play in measure 008 and then the PATTERN will stop.
- Playback the pattern – notice it automatically loops on playback. (LOOP ON/OFF in PATTERN mode only affects the RECORD).

In this fashion you can build complex or simple drum track arrangements. The data generated by the arpeggio pattern type will be written out as individual MIDI events to the targeted track. So rather than just one note-on event being responsible for the playback, every event is actually written to the track (where you can now individually edit each event, if you so desire). And significantly you can assign the arpeggiator elsewhere – because the drums no longer need the arpeggiator it becomes available for use on a completely different PART. This method of ‘painting’ arpeggio patterns to the tracks of the sequencer can be carried out in either PATTERN or SONG mode. The advantage is you can now edit any of the events.

### The unusual...

Looking for some inspiration? Here we will give you a tip on some of the special drum arpeggio gems that you may not discover on your own or even know about. Drum/Percussion arpeggios #**5789-5804** are in a category called “Genrl” (general)

These can be used in a unique fashion to create alternative drum patterns – you will have to use your imagination.

Call up Arpeggio Type #**5796** “16BeatSlice1”

Hold down note “C1” (kick drum). Observe that a rhythmic pattern plays.

Add note “D1”

Add note “F#1”

Add note “A#1”

Any held notes will create a drum pattern – the last four notes played will be active.

Alternatively, you can play individual notes and trigger a pattern that way. For example, in succession play a tom-tom fill using D2, C2, B1, A1

There are several ROLL arp types... to use these you will want to set the ARP’s LOOP parameter = OFF.

### **The ARP PLAY FX**

While in [ARP EDIT] you can adjust the behavior of the arp type you have selected.

Press [F5] PLAY FX

Here you will find also the TRIGGER MODE parameter, which can be set to “Gate” or to “Toggle”. Gate is the normal setting and is easily understood – when you press a key the arp plays and depending on the HOLD setting, when you let go it will stop. Toggle is the setting that allows the first touch to start playback of the arp phrase and the next touch stops it.

The ACCENT VEL THRESHOLD parameters sets a velocity level that when exceeded can add pre-programmed “accent”. Refer to the DATA LIST booklet to see if a particular drum arp type features VELOCITY ACCENT.

You can very much influence how an arpeggio is playing on this particular screen. Experimentation is the name of the game.

### **REHEARSE and ERASE Functions**

There is a very useful REHEARSE mode on the MOX. Let’s setup to record a PATTERN...

- Press [PATTERN]
- Select a blank Pattern



- Press [CATEGORY SEARCH]
- Select DRUM/PERCUSSION
- Select a drum kit you want to work with... Press [ENTER]
- Press the RECORD button to see the [F1] SETUP screen

On the Setup screen you can see the REC TRACK that is selected; you can select the RECORD TYPE (REPLACE or OVERDUB or STEP); you can set the LOOP function ON or OFF; additionally you can see that you can verify your Voice, select to QUANTIZE (automatic timing correction) and so on.

Above [F5] CLICK you see a speaker icon indicating that the metronome is set to sound when you press the PLAY button [ > ].

The Tabs available are [F2] ARPEGGIO and [F4] ERASE. The ARPEGGIO tab would be selected if you have assigned different arp phrases to the [SF1] – [SF5] buttons (we will do that later). You can select arpeggio phrases to play as you press these buttons – what we refer to as “painting the track” with arpeggios. The ERASE tab is there (in white) because as your Pattern cycles around if you want to remove a drum you can hold [F4] ERASE + the offending KEY to remove its data from the phrase. This is a real time erase feature.

While you are recording, you can temporarily drop out of record mode without stopping. This allows you to rehearse what you are going to play. It also allows you to find a drum key. It sometimes is difficult at first to remember the location of each sound. The REHEARSE function is very useful. To activate it simply press the [RECORD] button again – it will begin to flash, indicating you are temporarily out of record mode. No new data will be written to the track. You are free to play the keys without adding new data to your cycling pattern.

### **Inspiration for drum programming:**

Many players spend a significant amount of time learning the fingering so that they can articulate an entire drum groove in a single pass. The good news is you do not have to if you don't want to... there are no rules about how to record your drums and you get no extra points for being able to play it all at once. Spend time listening to real drummers – it can help you “think like a drummer”. Watching and listening to real drummers can teach you a lot and even though you may not be as able to pull off what they do, I guarantee you will learn something that will make your programming better. Real drummers will always have something that you cannot capture (hopefully); don't worry about that... do the best you can. One key is that they only have four limbs – respect that (or not). I say, “or not” because,

maybe your goal is **not** to sound like real drums... and that is legitimate too. Know the rules so you know when you are breaking them!

Try recording one drum at a time. On the Setup screen in the upper right corner you set the LENGTH parameter – this is very important. It tells the MO-X when to cycle the pattern. If you are new to counting music, learn how. If you are in 4/4 time... this means that there are 4 Beats to a measure and each ¼ note gets one beat. By far this is the most popular time signature in today's popular music. Hipper than playing in 2... most folk music is in 2... Marches are also in 2. I met a professor who contended that most folk music is in 2 because even those with no sense of rhythm can find the beat, and if they miss it they are only off by 1 and no one knows and feels silly! Music in four, on the other hand, leaves plenty of room for the uncoordinated to get lost. The ‘back-beat’ evolved to help keep everyone in line. The “back-beat” is the strong accent you find in many types of popular music that occurs on beat 2 and beat 4. Without getting into a big discussion about *what is hip?*... let's just say, the more you listen the better you will be able to program your own.

### ***What is a PATTERN 'Phrase' and what is a PATTERN 'Patch'?***

Any time you record something in PATTERN mode, the MO-X sequencer will place that information on a track in an entity called a “Phrase”. So a Phrase is a group of MIDI events that can then be moved, recalled and edited as a unit. For example, say you record a drum kit to Track 1 – you use a Kick, snare, high hat closed, high hat open, and a crash cymbal. Say you record for 008 measures and then stop. The MO-X sequencer will automatically number this recording and archive it as PHRASE 001. You can make a total of 256 individual recordings like this in a PATTERN. They can be drums, bass, guitars, etc.; the instrument does not really matter. Any time you record in a PATTERN the data is placed in a PHRASE and given the lowest available number designation between 001 and 256. Why 256? Because there are 16 tracks in the sequencer and there are 16 Sections in Pattern mode - 16x16 = 256 possible Phrases. Normally, this is many more than you will need.

You can additionally name each phrase if you wish. Most people find, however, that the number that is assigned is sufficient. But if you are one of those people who like to keep things strictly organized, you can name each Phrase with a [JOB] > [F4] PHRASE > Job 09: PHRASE NAME.

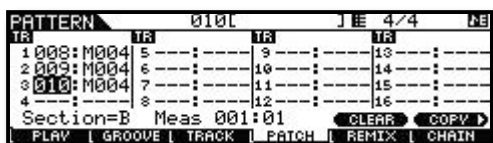
A PHRASE can be *activated* in any Section. Say you know that the basic groove you just recorded



in SECTION "A" (your first verse), will be used again in the composition for the third verse (SECTION 'C')... different musical parts on top but the same drum groove. You do not have to COPY it, simply go to SECTION 'C' and *activate* PHRASE 001. Phrases can be recalled simply by selecting them - very convenient. A Phrase contains all the MIDI data that you generated while the track was in record. It is not sound... it is the MIDI data. It is not the VOICE you selected, it is the MIDI data. It is that MIDI data organized in a reusable, numbered package. It has a Phrase LENGTH shown next to the PHRASE number.

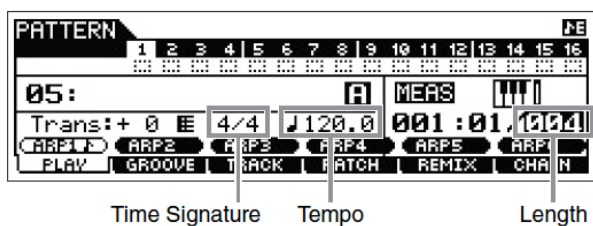
From the main PATTERN Play screen:

- Press [F4] PATCH



At left you can see that on the first

three TRACKs of SECTION B three Phrases, numbered 008, 009 and 010, are 'patched' to the grid. The Length of each is shown to the right of the Phrase Number and is an indication of how many measures you have recorded before these phrases begin to loop (M004 = 4 measures). The Phrases are numbered in the order that you record them. The **Phrase Length** is determined by a parameter setting made prior to entering record. In order for PATTERN phrases to loop, you must, quite naturally, set a *phrase length* before starting. This is found on the main PATTERN screen:



The Phrase Length parameter, the Time Signature and the Tempo are the mathematics that the technology uses to deal intelligently with our music. As musicians we do not use clock time (minutes and seconds) to subdivide our compositions, rather we use Measures and Beats. Once you define this framework (4/4 Time and 004 Measures) your recorded phrases will maintain that form, such that at the end of the four measures the phrase will seamlessly repeat from the top (whether or not the sound is seamless, will depend on your performance, but the technology will return the exact length every time at the current tempo). Each phrase is a separate entity.

You cannot simply change the number of measures you have recorded (without executing

an edit job). Part of what is recorded into the PATTERN's Phrase data is the **number** of measures that were set at the time you recorded it. While in PATTERN mode you can manually control how many times, for example, this SECTION "B" repeats. You can change to another Section using the front panel buttons designated as SECTION CHANGE (A-H and I-P). The change from one Section to another can be set to happen at the top of the next measure (this way a phrase can be allowed to complete before the Section change occurs), or you can have the MO-X change to the next Section at the nearest half note, quarter note, eighth note or sixteenth note. This is set by a (PtnQuantize) **PATTERN QUANTIZE** parameter.

- Press [UTILITY]
- Press [F2] SEQ
- Press [SF3] OTHER
- PtnQuantize or Pattern Quantize has to do with correcting to the nearest musical value the PATTERN SECTION selection. Required: PATTERN SECTION button must be lit in order for buttons [1]-[16] to take on the role of SECTION A-P selection switches.

This may be a new gesture for you - but by pressing the SECTION button in the measure just prior to the measure you want it to change is something that you can quickly get used to. You can press that button anywhere during the preceding measure, the change faithfully takes place automatically at the appropriate time - you do not have to hit it with the precision of playing a musical note. The screen will briefly show a letter "N" to indicate your **NEXT** selection. The letter will disappear at the top of that next measure and the measure will transition on cue.

### Nested Loops

Phrase Length is shown on the [F4] PATCH screen; however, SECTION Length is determined by how many times you let the Section repeat. Please also note that Phrases can be a various lengths. You could have a 1 Measure Kick drum and a 4 Measure Snare with an 8 measure Hihat Phrase all playing along side each other. Each will repeat according to its Phrase Length. The KICK Phrase will play 8 times for each Hihat Phrase.

### Using the PATTERN mode's REMIX function to create cool variations

Let's say you are not the wizard programmer of drums. And it seems that all your grooves come out sounding the same (it's just us here now, you don't have to make out like you have a million different ideas). Truth is everyone gets writer's block at some point. This can particularly happen

when it comes to something like drum grooves. This is one of the things we discussed when the MO-X was designed and is the germ idea behind what we call the PHRASE FACTORY. Not only do we give you more than 1900 drum grooves, we give the innovative **REAL TIME LOOP REMIX** function (or "Remix" for short). This function is one of the most powerful interactive tools you will ever work with... let me say out front, it does not always come up with great ideas, YOU have to decide what is a 'great idea'. The thing that it does that is brilliant is that it takes **your** data and spins it into literally thousands of possible variations.

Real Time Loop Remix divides the MIDI data on a selected track into several pieces of a specified note length, and then randomly rearranges a portion of the data, letting you easily create completely new and unique rhythm variations based on your input. Let's just say this is one very powerful and hopefully useful tool.

Now when the description says "randomly" - do not think that there is just no thought to this. Quite the contrary - you will want to read the Reference Manual section on this (page 103) to get an idea of how this function is analyzing what is on the track and how it then according to your settings, rearranges the data. It is not totally random because if you apply the same settings to the same data three times in a row it will do exactly the same thing. This is a good thing because you can count on the results when you want to use this "live". (That's right, you can use this function to "take a drum solo" in a live situation, it is that cool - it is after all called "REAL TIME Loop Remix").

So when they say 'semi-random' it is a 'qualified' semi-random. However, if you accept (keep) the results and continue to apply the same setting, each variation will be farther and farther away from the original. This will all make more sense once you begin working with it.

You set three different parameters: Type, Variation and Interval.

There are 16 different TYPES

The VARIATIONS include: 16 Normal, 16 Break, 16 Roll, and 48 Fill

INTERVAL can be set to every measure, 1 through every 8<sup>th</sup> measure.

As the **TYPE** number increases the complexity increases.

#### **VARIATIONS:**

Normal - means the data is repositioned

Break - will gate the duration of the note-on events and will create a stop action feel.

Roll - this creates drum rolls, press rolls on different drum sounds - very useful for creating realistic drum rolls.

Fill - there are 48 variations here and these are great for leading back to the top of a pattern.

#### **INTERVAL:**

This controls how often the altered data will occur.

1 = every measure, 2 = every other measure, 3 = every third measure and so on, up to every 8<sup>th</sup> measure.

Real-time Loop Remix is a *trial and error* function. Depending on the original pattern what it comes up with will vary. If any portion of what it creates is useful, press [ENTER] to register it in a new Phrase. You can extract the data that you like and use it somewhere. To get the most of out this function you have to have patience, a good ear, and imagination.

The **Real Time Loop Remix** function is non-destructive. This means that your original data is always kept - the new Phrase is written to an edit buffer. If you decide to keep it, it gets written to the lowest numbered empty Phrase, and that phrase is "patched" to the currently selected PATTERN SECTION and TRACK. The original Phrase is not lost; it is simply **unassigned** (not patched into a SECTION). Your newly created Phrase will be patched into the SECTION when you accept it.

### **Divide Drum Track**

Let's look at "Divide Drum Track" - which is found by pressing [JOB] > [F5] TRACK

This function is a sequencer JOB that basically allows you to use 8 tracks of the sequencer to initially construct your drum track. Then once you have worked out the drums you can reassemble them on to one track. This will use 8 tracks of the sequencers as a work area for drums and when you have completed your work you will clean up and free those tracks for other music data.

Concept example: You record your basic drum groove using a **single** KIT on a **single** Track. Divide Drum Track will then analyze what you played and automatically EXTRACT the different components and split them (dissolve) to separate tracks 1-8. The idea is so that you now have separate tracks for your Kicks, snares/Handclaps, cymbals, toms, percussion etc. And you have the data in separate Phrases.

This will allow you to do things like quantize the different components with different swing values. In general, quantize (timing correction) can be done in the sequencer either as you record **or** after the fact... it can be done both permanently **or** non-destructively. You can now shift just the

snare drum behind the beat... you can swing just the high hat parts... basically you can bring the full power of the sequencer editing jobs on each individual drum component.

Divide Drum Track will also allow you, if you wish, to keep the drums (permanently) on separate tracks, choose different kits. Or you can choose different sounds and then assemble those sounds into a custom drum kit... the possibilities are many. However, once you have edited the timing (swing) and velocity of the performance on separate tracks you can reassemble the drums to a single track (using the MIX TRACK Job).

#### What it does:

**Divide Drum Track** will take your kicks and place them on tracks 1 and 2, the snare/handclap or any item that functions on the back-beat and place them on tracks 3 and 4, cymbals and other dressing on 5 and 6, toms and percussion to 7 and 8. So you can think of this JOB as a special type of EXTRACT job.

There is also a specific EXTRACT EVENT [JOB] found at [F3] EVENT, that lets you take all of one particular note (or range of notes), for example and move it to a separate phrase – which can then be ‘patched’ to a new track. This is useful for example to pull out one drum and then affect its performance data in some way and then place it back (using the MIX job). The DIVIDE DRUM TRACK Job will *overwrite* data in the target location. However the EXTRACT EVENT and MIX Jobs will *merge* the data with the target.

Depending on your final goal, you can either leave your drums divided out on separate tracks or you can **reassemble** them to a single track. The possibilities are there for you. As we have mentioned numerous times, there is no one-way to work. We have suggested that you might begin your composition in SONG mode using just a simple repeating *drum-groove-as-metronome*, you could later use the entire PATTERN mode to construct your drum track in greater detail. Moving data between the two sequencer modes is easily done with the appropriate JOB functions. Your drum track could be assembled in PATTERN mode and then moved to a linear Song, even cut and pasted to specific measures within that Song.

The Divide Drum Track is a very useful spin on the EXTRACT function – because it can intelligently sort data and give you separate phrases from a single phrase. If you, for example, originally have your drums on Track 10, when you Divide Drum Track, you wind up with your original data (phrase) assigned to track 10, and individual “divided” phrases spread out as necessary on tracks 1-8. By using a track outside of the original

eight, you can maintain the original undivided phrase and get each drum category divided out by the job.

What you can do with the divided data is open for you to explore. Ever want to grab just the hihats from a particular drum groove? Ever want to quantize the hihats separately from the rest of the kit?

If you are not going to need the additional tracks then you can simply skip the MIX TRACK job and use tracks 9-16 for your music. But if you require the tracks for your other music, you can create a custom kit containing just the sounds you like – assembling drums into a kit is easy enough (covered in the REFERENCE Manual, page 47).

## ***Extract Event, Mix Track and Mix Phrase Jobs***

Start to see these JOB functions as inter-related tools:

### **Extract Event**

Press [JOB]

Press [F3] EVENT

Select JOB 04: **EXTRACT EVENT:** This Job lets you define a measure region (even a single note) and remove that region of events by moving them to an empty track. The data is actually removed from the source track and placed in the target destination track. This allows you to remove all of one type of data, be it volume data, system exclusive data, note events, etc. You can isolate a snare drum assigned to note D1, extract it to an empty track; perform an edit and then place it back in with the original data using the MIX TRACK Job

### **Mix Track**

Press [JOB]

Press [F5] TRACK

Select JOB 03: **MIX TRACK:** This Job lets you take data from the source track and combine it with data on the destination track. It does this without deleting the source track and it merges the data with existing data on the destination (target) track. Because the source track data remains you can delete it separately or keep it to combine it with another track.

### **Mix Phrase (Pattern mode only)**

Press [JOB]

Press [F4] Phrase

Select JOB 03: **MIX PHRASE:** This Job lets you take data from a PATTERN mode phrase and combine it with data of another PATTERN mode phrase. You can use this to combine data even if that data is from a different PATTERN number entirely. It is non-destructive as both the source

and destination phrases will remain. When combining Phrases within the same PATTERN check the "Current Pattern" box.

Earlier in this article we discussed the Divide Drum Track job. What it does is use the Extract function to divide drum kit notes by kind splitting them to empty tracks. You can then edit those tracks and finally recombine the data (if you wish) using the MIX TRACK or MIX PHRASE Jobs.

If you **EXTRACT** a snare drum, for example, you can then select a special DRUM kit that is nothing but snare drums. These ALL Snare Drum kits ("Acoustic Snares" and "Grouped Stereo Snares") are useful because then by simply Note Shifting the data you can audition many different snare drums in rapid succession. When you find a particular snare drum you like, you can either just leave the note 'shifted' to that pitch or you can identify which snare that is and edit it into your own custom KIT.

There are also ALL bass drum Kits, as well, ("All Kicks" and "Dance Kicks") which in a similar fashion can be used to try out different Kick drums in rapid succession.

Depending on your final goal, you can either leave your drums divided out on separate tracks or you can reassemble them to a single track.

If you are not going to need the additional tracks then you can simply skip the MIX TRACK job and use tracks 9-16 for your music.

### **The Groove Grid – Play FX**

This is found on the main sequencer screen at [F2] GROOVE. The MO-X has a special function that allows you to set up your own groove quantize template. It basically has four parameters that can be applied (non-destructively) to your drum data. The parameters are: Note Offset, Clock Shift, Gate Offset, and Velocity Offset.

You can **Clock Shift** any event occurring on a track by designated number of clock ticks... You can shift it as far back as 120 ticks (a 16th note) or you can "push" the beat by shifting it as many as 120 clock ticks forward. Sometimes shifting a snare 6-10 ticks back is just enough to give the right feel. This function is like a programmable quantize, but it goes beyond just clock shifting. **Note Offset** lets you transpose the track, so you can change the snares to a different drum...

**Gate Time** is how long a note sounds. Now while most of the preset drum sounds are programmed to ignore note-off, which means this GATE TIME parameter will have no affect. However, you can edit a drum sound to respect note-off, you can

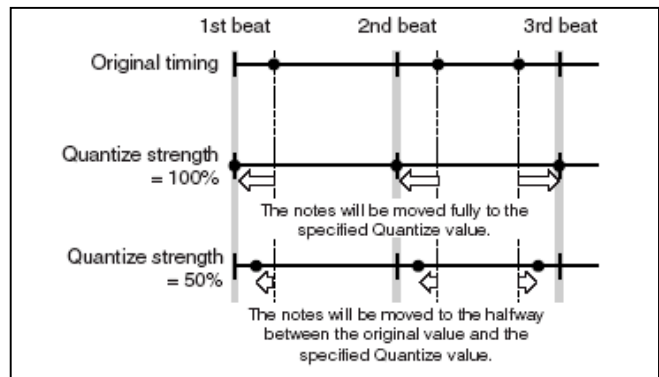
change the duration of any of the sounds. This is very useful on a crash cymbal when you want to create a "choked cymbal"... Edit the Crash cymbal in your drum kit so that it "RECEIVE NOTE OFF" = ON. This way the GATE parameters will affect it. You can also use the Gate parameter very effectively on musical (non-drum) sounds.

The **Velocity Offset** can be used to add accents or de-accent a particular beat. Remember swing is all about not just timing, but about impact and volume of what is played. "Ghost" notes can add great realism to your drum track.

This function is applied as a one measure function - you are setting up a custom quantize - think of it as a programmable Groove Quantize.

### **Quantize: Before or After**

Quantize is the function that lets you change the positioning of notes against the time. In the MOX sequencer this can be done as your RECORD, or



can be applied to data after-the-fact. This is your choice. Quantize is one of those "tools" you find in modern sequencers that many feel funny about using. It is the 'ultimate cheat' because it moves your notes from where you actually played them to some other pre-determined position so that the timing is 'corrected'. It is particularly useful for drum programming because it is difficult enough to play musical sounds in time, no less program drum grooves from an interface like a keyboard. When you press the RECORD button, the SETUP screen offers you an opportunity to set a Quantize value. This will be the smallest musical timing interval that the sequencer will record. For example, if you set the Quantize value to a sixteenth note (120), then all notes played will be placed on the nearest sixteenth note. This can only help you if you are consistently late or consistently early. If you miss the beat entirely and have absolutely no sense of rhythm, QUANTIZE can actually make things worse. It can be used to tighten up loose timing but it cannot fix things if they are too far off.

The Quantize function is found on the RECORD SETUP screen, and it is found as a sequencer NOTE Job.

- Press [JOB]
- Press [F2] NOTE
- Select Job number 01: Quantize

Quantize is auto-correction of musical timing. It can be strict or loose because it is programmable. If, for example, you are a little off at a particular point in the song you can use the quantize job to move your notes to nearest musical value of your choosing. The resolution of the Motif sequencer is 480 pulses per quarter note. This means it divides each quarter note into 480 equal parts. That is, 1920 clock ticks per 4/4 measure. These clock ticks are often referred to as: pulses per quarter note (ppqn).

Simple math next:

480 ppqn = 1/4 note, 4 per measure in 4/4  
240 ppqn = 1/8 note, 8 per measure in 4/4  
120 ppqn = 1/16 note, 16 per measure in 4/4  
60 ppqn = 1/32 note, 32 per measure in 4/4

320 ppqn = 1/4 note triplet, 6 per measure in 4/4  
160 ppqn = 1/8 note triplet, 12 per measure in 4/4  
80 ppqn = 1/16 note triplet, 24 per measure in 4/4

Think of quantize as follows: the resolution of the sequencer is 1920 pulses per 4/4 measure. Each of these "Clock ticks" is a pin sticking up; 1,920 of them... and your notes are like ping-pong balls, that when dropped, must land on one of these pins. Cool, huh! There are major pins (1 foot long) every 480 (those are your quarter notes. There are pins (half as long) every 240 pins (those are your eighth notes). There are pins half again as long every 120 pins... and so on.

Although Quantizing during record can be used to tighten-up your timing, you have the options of recording your data without quantize and applying it after the fact. When you apply quantize after the fact, you have more options about how this timing correction is applied... including allowing you to artfully change the feel of the music. Let's say you are trying to land on an "1/8 note" pin and you are late by 12 clock ticks, er, a pins. Quantize (at 100% Strength) will move your ping-pong ball (note) to the nearest pin that represents the value you select. If you set the "Strength" to 50% what this means is that it will move your note half the distance to the strict value. In my example you missed the 8th note pin by 12 ticks late, meaning you landed on tick 252, a quantize to the nearest 8th note (240) with a 50% Strength will move you 6 ticks toward a value divisible by 240; to 246... which is half way between 240 and 252.

When using the QUANTIZE job you can select a measure, beat and clock tick range over which to impose it. You can select a quantize value, a Strength, imply a swing rate % (50% is no swing, through 66% which is a triplet/Shuffle feel), Gate Time (changes the duration of notes, careful here - this will mess with your feel). Once you execute quantize, listen closely to what it has done. You can UNDO it, as well. The last JOB executed on a track can be undone.

- Press [JOB]
- Press [F1] UNDO/REDO
- Press [ENTER] to execute

### **Normalizing Play FX**

Normalizing Play Effects is the act of making **permanent** the non-volatile Groove Grid Offsets. Unlike "normalizing" an audio file, this normalizing is all about writing the MIDI offset data to the track. This JOB will allow the MO-X to write the actual data to the sequencer's Event List. And while doing so it will "zero out" (refresh) the Groove Grid.

- Press [JOB]
- Press [F5] TRACK
- Select the JOB: Normalize Play FX

Please note that when you use the Groove Grid to offset the data, this is done in real time. You **must** 'normalize' the data (make permanent) before you can create a PATTERN CHAIN and convert your PATTERN data to a linear SONG. The GROOVE GRID allows you to audition different quantize offsets; while 'normalizing' is like making a commitment to those offsets. And you must commit to those changes before data can be "chained" or converted to a linear SONG.

### **Building a custom Drum Kit**

A Drum Kit is really 73 different Instrument sounds in one VOICE. Each drum instrument (referred to as an Element) can have its own Volume, EQ, Pan position, routing to the effects, filter, envelope, etc., etc., etc...

Each drum instrument is typically triggered from a single KEY but can be one or more digital recordings (velocity switched).

From VOICE mode:

Press [EDIT]

Press Track [1] to view KEY parameters

Touch a Key to view each instrument

Press [F1] OSCILLATOR

On this screen on the right side you can see the three parameters:

Ins Effect Output, Reverb Send, Chorus Send.

An individual drum element can be routed **either** to the INSERT EFFECT OUTPUT **or** to the System Effects (Reverb Send/Chorus Send). It is either/or. If you route a drum to the INSERT EFFECT OUTPUT, you will notice that the System Sends disappear.

If the INS EFFECT OUT = 'THRU' then the drum is available to go through the Reverb and Chorus - you have send amount for each drum element.

So you can setup a Compressor as one of the Dual Insertion Effects (this is a COMMON EDIT parameter) and then route individual drums either to the Compressor or not.

The Dual Insertion Effects in a DRUM VOICE can be "parallel". What that means is: they are separate... Or you can route INS A into INS B (or vice versa). In that scenario the output of one INSERT goes to the other. This routing applies to the entire KIT. (In the example used below, the routing is "parallel" - so each Drum can be sent to one or the other of the 2 Insert Effects...

A good example of this (and a great one to learn about the routing within a drum Kit) is the Kit called "Garage Kit" PDR: 041(C09)

It has:  
INSERT A = Compressor: Classic Compressor  
INSERT B = Distortion: AMP Simulator 1  
Reverb = R3 Room  
Chorus = VCM Flanger

From the main screen press the [F6] EFFECT button (this is a *shortcut* to the [COMMON EDIT] > EFFECT > CONNECT routing screen). Move your cursor to highlight the KEY parameter in the extreme upper left corner (if it is not already there).

You can HOLD down [SF6] KBD and touch a key on the keyboard between C0 and C6 to recall the routing of each drum Key. In the upper left corner you can see that each drum KEY will be routed to one or the other of the Dual Insertion Effect **or** it will be available for Reverb/Chorus.

While holding down [SF6] KBD you can quickly see and Edit if necessary - each Drum KEY's routing through the effects. Notice that KEY "C0" is selected and that it is routed to the REVERB and CHORUS processors. It does not go through the Insertion Effects.

At left, you can see that KEY C1 has been selected. This is a kick drum. And it is routed to INSERTION A, the Classic Compressor. In this Voice you can see that the Insertion A and Insertion B processors are routed in "parallel". You could

select to have the routing configured A>B or B>A or as shown, parallel.

Because the KEY C1 is routed to the Insertion effect, notice that the Rev Send and Cho Send are not active for this particular key

So if you want to send just the kick and snare to the compressor you can - when you STORE your Kit to a USER location, and then place it in a SONG MIXING or PATTERN MIXING program it will recall all of the edits you made here.

Here is the same information as seen from the EDIT KEY screen for "C1". Notice that the "Ins Effect Output" = ins A. There is no Reverb Send and no Chorus Send for this drum.

If a drum is routed to the System Effects (Reverb Send and Chorus Send) it will respond when you raise the overall REVERB or CHORUS send level in the MIXING program, if however, the drum KEY was routed to one of the Dual Insertion effects then it will not be effected by the increase or decrease in the SEND level - it will instead be routed to the INSERTION EFFECT as designated in your VOICE.

In order for the drum keys that are routed to the INSERTION EFFECT to access their Insertion Effect, the drum PART must be one of the eight PARTS designated to recall its Insertion Effects in the MIXING setup.

## **ONE SEQUENCER - MANY JOBS**

There is no one method when constructing your drum tracks. You might choose to record in SONG mode using a basic drum groove as a working tool, and later "paint" the track with arpeggio data. Or you may use the PATTERN mode to refine your drum track... placing fill-ins where necessary. Learning about moving data between PATTERN mode and SONG mode and vice versa can be very useful in creating and placing data where you need it. Each of these modes (SONG and PATTERN) is part of the same sequencer. Certain functions are best carried out in one or the other. As we will begin to see in this section of the article, moving data back and forth will open opportunities for you and is easily accomplished. First we will describe moving data from a PATTERN to an associated SONG. You can move all tracks together with some functions or you can move individual track data with others. Then we will describe moving from SONG to an associated PATTERN. Again you have some functions for moving all tracks together and others that will allow you to select individual data and move it.

Not only can you “CHAIN” an entire PATTERN Section *play order* arrangement and move it to a linear SONG, but you have the ability to put individual Phrase data directly from PATTERN mode to SONG using the PATTERN Mode JOB: PUT PHRASE TO SONG. And conversely, you can use the GET PHRASE FROM SONG Job to grab specific data from a SONG and bring it into your PATTERN workspace.

If you are working initially in SONG mode, you can use the JOB: **SPLIT SONG TO PATTERN** to move entire measure regions (all tracks) of a SONG to a specific PATTERN Section. And conversely, you can use the **COPY PHRASE** Job to grab a specific individual Phrase data from a PATTERN and bring it into your SONG workspace.

### **Moving data PATTERN mode > SONG mode**

**PATTERN CHAIN:** The Pattern Chain function allows you to string several different Sections together to make a one complete composition. It is like automating the playback order of the musical sections. It lets you try out different arrangements: AABACABAD. For example, create a Section [A] for the intro, a Section [B] for the verse, a Section [C] for the chorus, and a Section [D] for the ending — and you have the basic blocks to build an original composition. You are provided with up to 16 different Sections [A] through [P] simply for flexibility. You may want to make a COPY of a section and then make subtle changes to it so that it is not exactly the same. The created Pattern Chain data can be converted to MIDI sequence data and stored to a Song. To call up the Pattern Chain display, press the [F5] Chain button from the Pattern Play mode. A Pattern Chain can be created for each Pattern, letting you call up a different, dedicated Pattern Chain each time you select a Pattern.

The following events can be recorded to the Pattern Chain.

- Playback order of Sections
- Pattern track on/off—Track Mute status
- Tempo change
- Time signature change—Real time control of measure length

There are two methods to create a Pattern Chain: Recording playback of a Pattern in the **Pattern Record** display in *real time*, and programming the playback order of Sections one by one in the *Pattern Chain Edit* display. The Pattern Chain data recorded in real time can be edited in the Pattern Chain Edit display. It is from the Pattern Chain Edit display that you can convert the Chain to a linear SONG. [SF3] SONG. (See the section of the manual starting on page xxx for details about Pattern Chain function).

**PUT PHRASE TO SONG:** While Pattern Chain is excellent for moving all tracks from Pattern mode to a Song, the PHRASE JOB called “Put Phrase to Song”, allows you to move just a single Pattern recording (Phrase) to any location within a Song. This is useful if you have worked out a short drum fill-in or transition and want to “paste” it into your Song. Perhaps you used Real Time Loop Remix to create a unique transition phrase and you want to place it on the drum track in your SONG. From PATTERN mode:

- Press [JOB]
- Press [F4] PHRASE
- Select Job 07: Put Phrase to Song
- Press [ENTER]

Of course you can select the Pattern Phrase, you can target the SONG, the Track, select the Measure region, and you can Copy any samples assigned to the track.

**Tip:** One thing you will really like about setting up to work with SONG **and** PATTERN mode together is that much of the dialog box information will be setup for you. For example, say you are writing a composition in SONG 01 and working out parts of it in PATTERN 01. As you move back and forth the *context sensitive* operating system will recognize that you are moving between these two entities. Even if you are working on PATTERN 12 and SONG 03, the association will be made. So, for example, once you establish a link between the SONG and the PATTERN, the Jobs that move data back and forth will use those locations. You establish this link by simply going to SONG mode and selecting a SONG number, move back to PATTERN mode — the link is **automatically** established (as it “remembers” what you selected last). If you last selected PHRASE number 039, it will populate the dialog box with Phrase 039 when you select this JOB. If you last selected SONG 22 it will populate the dialog box with Song 22.

**GET PHRASE FROM SONG:** The PHRASE JOB called “Get Phrase from Song”, allows you to import a region of measures from any location within a Song and create a Pattern phrase. This is useful if you have data you recorded in SONG mode and you want to bring it into the Pattern. In Pattern mode you can Remix it or apply any of the Pattern functions to that data. Or you might grab data from some MIDI file. Perhaps you want to use Real Time Loop Remix to create a really unique transition phrase and then you want to place it back on the drum track in your SONG. From PATTERN mode:

- Press [JOB]
- Press [F4] PHRASE
- Select Job 06: Get Phrase from Song
- Press [ENTER]



You can specify the SONG, the Track, select the Measure region, you can Copy any samples assigned to the track and of course you can select the Pattern Phrase.

**Tip:** Important to know about the Measure region setting: you will notice that the default region is 001-002. What you need to know here is that this is the minimum setting. In other words, 001-002 is 1 measure. It is from the top of measure 001 to the top of measure 002 (but does not include the information in measure 002). If you want to include the information in measure 002, set the region to 001-003. If you want to move a four-measure phrase using this JOB, you would set the measure region: 001-005

### **Moving Data SONG mode > PATTERN mode**

**SPLIT SONG TO PATTERN:** There may come a need for you to take an entire region of a linear SONG and move it (all tracks) to a PATTERN Section. If your original idea came about while in a linear SONG, and you want to take region of it and work on it (perfect it) in Pattern mode, this SONG JOB is invaluable.

- Press [JOB]
- Press [F6] SONG
- Select JOB 02: Split Song to Pattern
- Press [ENTER]

Again you will be able to set the measure region – for example, if you wanted to take the first 16 measures of your linear Song and make it a Pattern Section, you would set the measure region 001-017 (this would include all 16 measures). It will target the associated (last selected) Pattern and Section. And if an audio sample is involved the sample data will be copied to the PATTERN.

**COPY PHRASE:** To complete the ring of Jobs that move data to/from Song and Pattern mode, the SONG Job called COPY PHRASE allows you when you are in SONG mode to grab an individual Phrase **from** a PATTERN and place it where you need it in your current linear Song structure.

- Press [JOB]
- Press [F5] TRACK
- Select JOB 08: Copy Phrase
- Press [ENTER]

The 'associated' Pattern will be automatically entered, as will the last selected Phrase from Pattern mode. You have an option to select to copy any sample if the phrase includes a sample, and you can target any track and any measure of your current SONG. The targeted measure will be overwritten.

Summary: Once you can see the SEQUENCER as a single integrated tool, you can construct your musical composition using several PATTERN locations, and you can assemble them into one finished SONG. The entire PATTERN mode can be used to create your drum track. Individual Drum phrases can be surgically inserted anywhere you desire.

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