

Tutorial 7: Using the Transform Menu

The *Transform Menu* is the place to go when you're stuck for ideas. We've already discussed one aspect of the *Transform Menu*, *Morphing*, in another tutorial and this chapter covers some of the other functions available to you.

Let's start with an easy example. Suppose you've been working with a sequence in the *Note Editor* and it sounds really good but the sequence starts in the wrong place, say step 5. It would sound much better if it started on step 1 so that it lines up with all of the other sequences. You could use the *Note Editor* to set the pitch and velocity for each step to the desired value but that would take time and might not work properly.

The *rotate* function in the *Transform Menu* can help remedy this situation. Let's look at a real sequence.

1	2	3	4	5	6	7	8
G7	F7	F7	G#7	G7	D#7	C6	C8
9	10	11	12	13	14	15	16
A#7	G7	A#7	C8	G7	D#7	C7	D#7

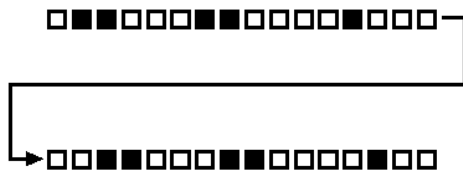
When playing this sequence, step 7 (C6) appears to be the best starting point for the sequence, so to move step 7 to step 1, we can use the *rotate* function to make the change for us.

```
40 Xform Rotate Seq 01
Start>01 End 16
```

In this case the sequence is 16 steps long, so when we enter the *Transform Menu* we can leave the *Start Step* and the *End Step* at the default values.

To perform the *rotate* operation, press the *Select* push button once. This will move all of the steps in the sequence one place to the right. In other words, step 2 becomes step 1, step 3 becomes step 2 and so on up to step 16, which takes on the value of step 15. What happens to step 16? Does it just fall off the end? No. The sequence wraps around to the start so that step 1 takes on the values of step 16. Our sequence now looks like this:

1	2	3	4	5	6	7	8
D#7	G7	F7	F7	G#7	G7	D#7	C6
9	10	11	12	13	14	15	16
C8	A#7	G7	A#7	C8	G7	D#7	C7



We can *undo* this operation if we press the *Shift* push button and press the *Select* push button again. The sequence will now sound the same as it did when we first entered this option because we've *rotated* the sequence back in the opposite direction.

Now, we originally wanted to move the start step of our sequence so that it began on step 1 whereas it is currently at step 7 (C6). To do this, we need to move the sequence to the left a further 6 times. If you repeat the operation above a further 6 times you should end up with a sequence that looks like this:

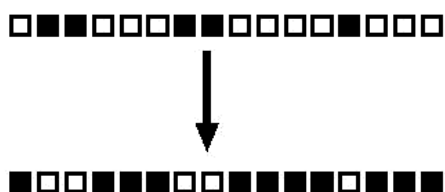
1	2	3	4	5	6	7	8
C6	C8	A#7	G7	A#7	C8	G7	D#7
9	10	11	12	13	14	15	16
C7	D#7	G7	F7	F7	G#7	G7	D#7

Before you proceed to the next step, save this sequence away. We'll need it later.

Inverting

```
42 Xform Invert Seq 01
Start>01 End 16
```

Next, we'll look at the *invert* function. Choose a sequence with an interesting rhythmic feel - in other words, a sequence with a few steps muted and/or skipped. Select the *Xform Invert* page and press the *Select* push button once. Any step that was *active* is now *muted* and vice versa. Any step that was *normal* is now *skipped* and vice versa. Listen to the results. It's possible to create some very unusual rhythmic patterns with this technique.



To *undo* this operation, press the *Select* push button again.

1	2	3	4	5	6	7	8
C6	C8	A#7	G7	A#7	C8	G7	D#7
9	10	11	12	13	14	15	16
C7	D#7	G7	F7	F7	G#7	G7	D#7

Now, what effect would this have on our example sequence? All of the steps are active and all of them are normal. *Inverting* this sequence would cause all of the *active* steps to become *muted* and all of the *normal* steps to become *skipped* and so we'd end up with a sequence that did nothing!

So, let's do something more useful instead. Let's *mute* all of the even numbered steps whilst leaving the odd numbered steps *active*.

1	2	3	4	5	6	7	8
C6	-	A#7	-	A#7	-	G7	-
9	10	11	12	13	14	15	16
C7	-	G7	-	F7	-	G7	-

Return to the *invert* page within the *Transform* menu, start the sequencer running and press the *Select* push button once. All of the *muted* steps become *active* and all of the *active* steps are now *muted*. The sequence now sounds like this:

1	2	3	4	5	6	7	8
-	C8	-	G7	-	C8	-	D#7
9	10	11	12	13	14	15	16
-	D#7	-	F7	-	G#7	-	D#7

Press the *Select* push button again and the sequence reverts back to its former state. So, the *invert* function gives you a quick way of switching between two patterns very quickly indeed.

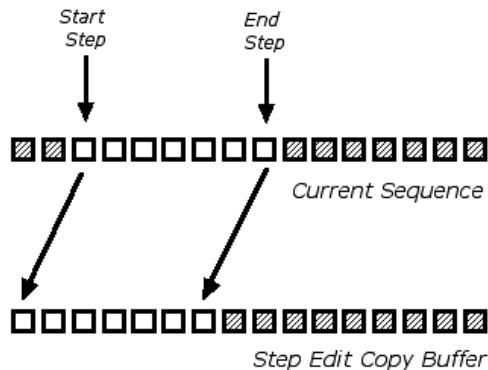
Merging

```
43 Xform Merge   Seq 01
Start>01 End 16
```

Merging two sequences is another way to create new patterns with interesting rhythmic and melodic properties. To use the *merge* facility, we first need to make sure that the *Step Edit Copy Buffer* contains some useful data. *Merge* won't work without it.

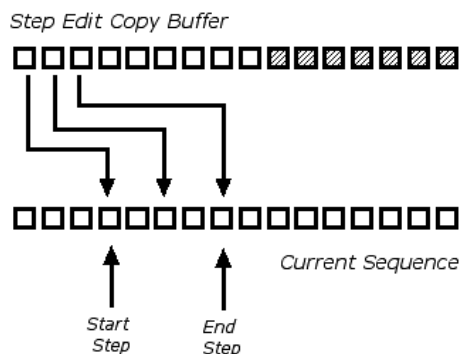
```
0a Step Copy      Seq 01
Start>03 End 09
```

Go to the *Step Copy* page of the *Step Edit* menu and change the *start* and *end* steps so that they're different from the *default* values, say, 3 and 9. Press the *Select* push button once so that the steps between the *start* and *end* points are copied over to the *Step Edit Copy Buffer*. Step 1 in the *Step Edit Copy Buffer* now holds the contents of step 3 in the source sequence, step 2 holds the contents of step 4 and so on.



Next, load in a different sequence using the *sequence play* menu and then return to the *Xform Merge* page within the *Transform menu*. Set the *start step* and the *end step* to, say, 4 and 8 respectively then press the *Select* push button once. *ZEIT* will *merge* the two patterns together.

In the previous paragraph, we set the *start* and *end steps* to 4 and 8 respectively. Steps outside the *start* and *end steps* will not be affected by the *merge* operation so steps 1, 2, 3, 9, 10, 11, 12, 13, 14, 15 and 16 won't change.



What happens to steps 4, 5, 6, 7, and 8? Well, the *merge* operation will copy step 1 from the *Step Edit Copy Buffer* and paste it over the top of step 4 in the current sequence. Step 5 is ignored and so retains all of its values. Step 2 in the *Step Edit Copy Buffer* overwrites step 6 in the current sequence whilst step 7 is ignored. Finally, step 3 in the *Step Edit Copy Buffer* overwrites step 8 in the current sequence and the *merge* is

complete. That's sounds complicated but the end result is that the current sequence contains elements of the original sequence plus the current sequence.

Note Wrapping

```
44 Xform NoteWrap Seq 01
Wrap On LwN>C4 UpN C5
```

Finally, let's look at *note wrapping*, a technique that can modify the sound of a sequence either very subtly or very dramatically.

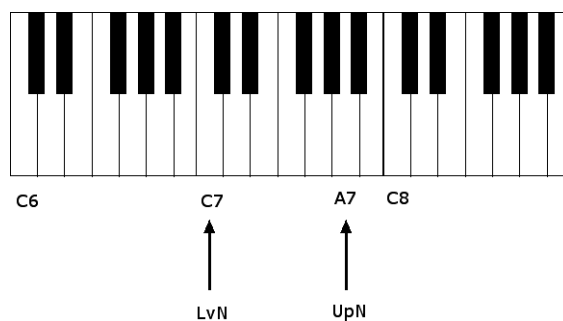
Before we begin, make sure that the *wrap function* is switched on. Move the cursor to the *Wrap* field and use the data wheel to set the status to *on*.

1	2	3	4	5	6	7	8
C6	C8	A#7	G7	A#7	C8	G7	D#7
9	10	11	12	13	14	15	16
C7	D#7	G7	F7	F7	G#7	G7	D#7

Let's return to the sequence we saved above.

The lowest note in the sequence is C6 and the highest note is C8. What would happen if we applied a *note wrap range* of C7 to A7?

Return to the *note wrap page* in the *Transform Menu* and move the cursor to the *LwN field*. Use either the data wheel or a MIDI keyboard to set the lower and upper thresholds for the *wrap function* to C7 and A7 respectively.



Step 1 has a pitch of C6, which is one octave below the *LwN* value of C7. The *Note Wrap* function works out the difference between the note pitch and the value of *LwN* and subtracts the difference from the *UpN* parameter. So, in this instance, the difference is 12 semitones and when this is subtracted from *UpN* yields a new pitch of A6.

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Step 2 has a pitch of C8, which is 3 semitones above the *UpN* parameter. When this is added to the *LwN* parameter, a new pitch of D#7 is generated.

Step 3 has a pitch of C#7, which is only 1 semitone above the LwN value. If we subtract this difference from the UpN value then the new pitch is G#7.

So, the *Note Wrap* function gives us one more tool for generating new and exciting sequences and patterns in real time. It is worth spending some time and effort learning to use these tools. The usefulness or otherwise of these facilities may not, at first, be readily apparent. However, we've found that they're an excellent way to generate new ideas and new directions for your music, which might perhaps take you somewhere that you wouldn't have otherwise explored.

