



The OAS-7 Sequencer

4 : Editing an Existing Wersi MIDI-File – (c)

We shall continue to use the Wersi Midi-File "Wonderful World". As in the previous Article, select **Settings > Edit Sequences** to give the screen shown below.

Sequence Edit Back

Wonderful World

Load Sequence Save General Part Control Vol.Control Master

Track	Solo	Mute	Sound	Vol	Pan	Oct	Rev	Chorus
7	S	M	Grand Piano *	0	0	0	0	0
8	S	M	Horn Section Warm*	0	0	0	0	0
9	S	M	Celesta *	0	0	0	0	0
10	S	M	03 Standard GM	0	0	0	0	0
11	S	M	Vocal 1 *	0	0	0	0	0
12	S	M	Solo Trumpet *	0	0	0	0	0

Delete Track Individual Track Entries 90 64 0 127 120 Edit

Left + Right Position

1	52	53	8	4
1	1	53	Beat	6/4
Tempo			107	
Offset(%)			100	

Locator Cycle:Off In Out Aftertouch Off Click:Off Quantize Off AQ:Off Overdub

Use this button to load "Wonderful World"

We'll start by having a close look at Track 10, the Drums Track. Touch the number 10 to highlight this Track, then touch the Edit button to produce the screen shown below.

I've used this third button down to navigate the Midi Event sequence so that Track 10 shows.

Edit Track Solo Back

Position	Event	Val 1	Val 2	Length
2:01:000	Contr Change	121	0	0
2:01:000	Contr Change	121	0	0
2:01:000	Contr Change	121	0	0
2:01:000	Contr Change	121	0	0
2:01:000	Contr Change	121	0	0
2:01:000	Contr Change	121	0	0
2:01:240	Contr Change	7	127	0
2:01:240	Contr Change	7	127	0

Notes Val1 Val2 On

Notes	Off	Off	<input checked="" type="checkbox"/>
PRG-Ch.	Off	Off	<input checked="" type="checkbox"/>
Controller	Off	Off	<input checked="" type="checkbox"/>
Pitch Bend			<input checked="" type="checkbox"/>
AfterTouch			<input checked="" type="checkbox"/>

Copy Delete

Insert Delete All

Exchange Modify Apply

Left + Right Position

1	52	53	0	0
1	1	53	Beat	6/4
Tempo			107	
Offset(%)			100	

Locator Cycle:Off In Out Aftertouch Off Click:Off Quantize Off AQ:Off Overdub

Position
Bar:Beat:Tick
This is explained in more detail on the next page.

Event
Contr(ol) Change:
PRG Change
(Programme Change):
Note

We're looking at Control Change and Programme Change in this article.

To reduce the amount of information showing in the Event column, these boxes can be unticked as required. To begin with, untick all boxes except Controller. The screen shown to the left doesn't change.

Control Change

The Val 1 column in the Screenshot above contains a value which indicates which parameter is being controlled. The Val 2 column indicates how that parameter is effected, known as the Control Value. Some parameters have variable Control Values where the Val 2 column will show a number between 0 and 127 (eg volume). Other parameters are switchable, where the Val 2 column shows either 0 for OFF or 127 for ON. In this latter case, any value between 0 and 63 counts as OFF and any value between 64 and 127 as ON.

Looking at the Screenshot for the start of Track 10 in this Midi-File, Control Change 121 is shown six times at the same position. 121 as Val 1 provides a switch for all other Controllers and 0 as Val 2 means that all existing Control parameters are switched OFF. This is standard for the start of a Midi-File but only one such event is normally needed.

The next Control Change event, at Tick 240, is value 7. This controls the main channel volume and the Val 2 figure of 127 shows it has been set to maximum. There are five of these identical events at the same place – not sure why when one would surely do?

If you scroll down further, at Position 2:01:300 Control Change 11 appears with a value of 127. This is a reading of the position of the Expression pedal and here it is indicating a maximum. This time there are six such identical events at the same time??

Further down, at Position 2:01:360 Control Change 10 appears with a value of 64. This is reading the Pan position of the sound in the Track, the value range being 0 (far left), through 64 (central) to 127 (far right), as is normally found on the Selectors screen. Five of these identical events appear here.

At Position 2:01:420 Control Change 91 appears with a value of 127 for the first two occasions, then 0, then 127 for the final two occasions. The final occasion of all is at a new Position of 2:01:450. This is reading the Reverb value. If there are multiple occasions of any Control Change, it is the final appearance which carries its result forward. So in this case, the Reverb is set at maximum.

The distribution of Control Changes is normally done at the beginning of a Midi-File with each change being at a different time. Each change takes a finite amount of time to complete so it's important not to "crowd" the software with events it cannot complete in the allotted time. Hence the first bar is usually devoid of any Notes. Further Control Changes can occur throughout the Midi-File, if a parameter is changed while recording or is edited later to change.

A full list of Midi Control Changes is available from many Internet sites – just Google "Midi Control Change".

Once you've downloaded a suitable table of them all, have a look at all the Control Changes in some of the other Tracks of "Wonderful World". Because they contain instruments as opposed to a Drumset, you'll find much variation in the way Control Changes are used.

Program Change

None of the Tracks in "Wonderful World" contain any Program Change messages. I therefore recorded a short piece using Midi-Record, and found that one track had the following events:

Position	Event	Val 1	Val 2	Length
1:01:309	PRG Change	0	0	0
1:01:309	Banc LSB	32	0	0
1:01:309	Banc MSB	0	89	0
1:02:157	Banc LSB	32	0	0
1:02:157	PRG Change	0	0	0
1:02:157	Banc MSB	0	89	0
1:04:195	Banc LSB	32	0	0
1:04:195	Banc MSB	0	84	0

Notice only PRG-Ch (Program Change) is ticked so only those events show in the list

I've cropped the screenshot to show only the Event List and added one final entry which is just off-screen above. This is shown on page 3.

Position	Event	Val 1	Val 2	Length
1:01:309	PRG Change	0	0	0
1:01:309	Banc LSB	32	0	0
1:01:309	Banc MSB	0	89	0
1:02:157	Banc LSB	32	0	0
1:02:157	PRG Change	0	0	0
1:02:157	Banc MSB	0	89	0
1:04:195	Banc LSB	32	0	0
1:04:195	Banc MSB	0	84	0
1:04:195	PRG Change	5	0	0

At Position 1:01:309, there are three events. It doesn't matter what sequence these are displayed in as they all occur at the same time. There is a PRG Change, a Banc LSB change and a Banc MSB change.

The same three types of event occur at Position 1:02:157 and again at 1:04:195.

The parameters of the first two sets of events are the same so this looks like duplication again. The third event has different parameters for Banc MSB and PRG Change and, as that is the final event, its effect should carry from there on in the Midi-File (but see later).

So what is this all about, then?

A Program Change is a change in the instrument (sound) playing in the particular Track. The values used tell the instrument which new sound to use.

Let's first look at the duplicated events.

The Val 1 figure for a PRG Change event is significant.

The Val 1 figure for Banc LSB is normally 32.

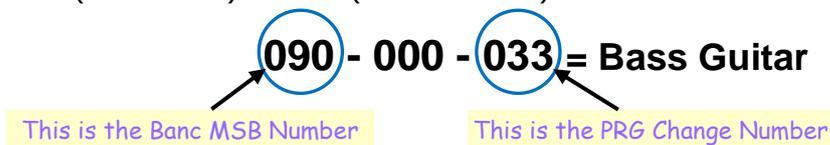
The Val 2 figure for Banc MSB is significant.

All other values can be ignored.

The word "Banc" we can interpret as a Bank of numbers, where the numbers are expressed in Binary form. There is a Most Significant Bit (MSB) and a Least Significant Bit (LSB) for each Binary number represented. If you're not familiar with the Binary System of numbering, as used within computers, it isn't important for working with this Sequencer. I just wanted to explain what MSB and LSB stand for. You can forget that explanation now!

You will have noticed on the Wersi touch-screen that all sounds have what is called a Midi Program Number, something like 089-000-005, which is the GM E-Piano 2. GM stands for "General Midi" and is a set of sounds allocated to values between 0 and 127 (in some cases, with no zero used, 1 to 128 – can cause some confusion!). Wersi uses 0-127. So, for example, a Grand Piano is always number 0 in the GM list, 56 is a trumpet and so on. This is standardization, but there are more than 127 sounds available in a Wersi instrument! This is where the Midi Prg No comes in, and the Banc references in the Midi Event List.

If you look at the list of sounds in your Wersi instrument (Settings > Edit Long Waves), you will find that all the GM sounds start their Midi Prg No with 089. Other non-GM sounds have other numbers instead, each one being a particular Bank (Banc) of Wersi sounds. Wersi's most recent sound additions they've given us for nothing have been in Bank 093, but there's only nine more spaces left in that Bank before it's full (of 127 sounds). In fact, there is a gap of seven between 103 (Brass Shake) and 110 (Effects General) also.



Therefore, in the above Event List, the first two Program Changes (identical!?) set 089-000-000 [GM Acoustic Grand] as the sound, while the third (and effective event) sets 084-000-005 [not used by Wersi] as the sound: therefore it is actually ineffective so the preceding PRG Change applies, ie GM Acoustic Grand.

The PRG Change values in a Midi-File can be edited to change the sound at any point in the Event List and the sound will change from that point on. If you are recording a Midi-File that information is picked up from the instrument both before you start to play and during playing if you change the sound of a particular Manual Layer. UM1-4 occupy Tracks 1-4, LM1-3 occupy Tracks 5-7 and PB1 and 2 occupy Tracks 8 and 9 respectively. Track 10 is always the Drumset Track, and Tracks 11-16 are the Style Bass and Accs 1-5 respectively. It appears that Track 10 actually holds DRM1 of the Style. DRM2 appears to be lost. (Can anyone shed more light on this?)

You'll also notice that the middle three digits of the Midi Prg No are always 000, so they can be ignored.

At the time of writing, there are some problems with R40 and Midi-Recording. There have also been changes made to the way Program Changes appear in the Event List. I hope that the problems with Midi-Record will be sorted out soon and I shall then continue my investigation of the Sequencer. At this stage I cannot predict what the next Article will contain, though.