

Sound Editing – 3 : Sound Control A

Welcome to this third article in our Sound Editing Series. Looking at the title you may wonder why I'm not completing the look at the ADSR envelope I started in the previous article. I hope some members may be able to help with this. Despite much time spent investigating I cannot make the Decay and Sustain functions work in the way I was used to when using "EL Edit" with my Yamaha EL90.

There I was able to set up solo sounds with a slight decay while the key was held down. This sounded very natural as it's the way an instrumentalist "bends the note". This involved setting a value for the start level of Sustain. Usually this was the same as the maximum level, that achieved at the end of the Attack phase. In that case there was no Decay. Decay is a rate value, as is Attack. That means the value sets a time interval during which the event happens: the Attack occurs quickly (0) or slowly (higher than zero); the Decay occurs quickly (maximum value) or slowly (lower than maximum value).

Changing the value of Decay should therefore provide a drop in level soon after the key is pressed and after the maximum attack level is reached. This can provide some interesting variations but it is not as useful as changing the Sustain rate value. This is the time taken for the sound to drop to zero while the key is pressed. A zero value for Sustain rate means there is no drop in level (volume) while a higher value means there is a measure of drop in level, the higher the value the faster that drop occurs.

There are therefore several values for the full ADSR envelope:

1. Initial Level (Volume) – this always equals zero because no key has yet been pressed.
2. Attack Rate – a value of zero means Attack is instant, values higher than zero progressively delaying the rise to maximum volume.
3. Maximum Level (Volume) – this occurs at the end of the Attack phase.
4. Decay Final Level (Volume) – this is the volume of the sound at the end of the Decay phase and is also the level (volume) at the start of the Sustain phase.
5. Decay Rate – this measures the time taken for the sound to decay from its maximum level after the Attack phase to the Decay Final Level value (Number 4 above). Low values provide low rates, ie long times.
6. Sustain Rate – this measures the time taken for the sound to decay to zero level. In practice the key on the keyboard is likely to be released prior to the sound achieving zero level. Low values provide low rates, ie long times.

Numbers 4, 5 and 6 interact with each other and it's possible to set values so that one or more of those events aren't audible.

Looking at the Wersi ADSR envelope, there are only four values given. Attack and Release have already been described and work as I expected. That leaves a Decay Final Level (Number 4), a Decay Rate (Number 5) and a Sustain Rate (Number 6) to be determined. Three values. There are only two left – Decay and Sustain. I've not been able to set up a Sustain Rate. The sound always continues at the level it achieved after Decay. I've also not been able to set the Decay to lower the level slowly.

If any member(s) can help explain this I should be very pleased. The above description about editing with Yamaha referred to FM sounds because the envelopes were actually more complicated when samples were used. Nevertheless, the same principles still applied.

Looking at the rest of the “Edit Long Waves” second window, to the right of the envelope are several parameters. Again, I’ve had success with only two of these: “Filter Cut-Off”, which acts like a treble control, and “Wave” which changes the timbre of the sound. I suggest you try these out for yourself to experience their effect.

Much more interesting is the “Sound Control” section at the bottom of the screen. Here are six parameters which can be changed. The parameters differ between different sounds. The range of values in each case is from 0 – 127, as usual. The values shown for any sound are the “Instrument” or “Inst” values set up in the factory. Changing any of those values here requires the “new” sound produced to be saved. However, the same six parameters occur under “Selectors” > “Sound Control” when in any Total Preset. There the sequence of parameters is arranged vertically and that matches the sequence under “Edit Long Wave” when viewed from bottom right to top left. You can therefore “temporarily” change those parameters in any Total Preset without affecting the values stored within the sound itself.

Under “Selectors”, the default values of each parameter are shown as “Inst”. You will need to go into “Edit Long Waves” in order to find out what these actual values are. I usually note them down from there and, upon returning to “Selectors” > “Sound Control”, change all the “Inst” values to the actual numbers. The sound stays the same, of course. Then I can change them, listening to the result, and either return them to the “Inst” setting which I noted down or leave them at a new value. When the Total Preset is saved, the new Sound Control values are saved as well.

Under “Selectors”, if “Reset Controllers” is ticked, changing a sound in a Total Preset layer (eg UM1) will revert all Sound Control values to “Inst”. If “Reset Controllers” is not ticked, that will not happen and a new sound entered into a slot previously occupied by a sound where you had set changed Sound Control values will result in that new sound acquiring all the Sound Control values of that previous sound. This must be remembered and the values readjusted because it can produce some very strange results.

Next time I’ll have a look at using Sound Control with some example sounds. If you have any favourite sounds you’d like us to explore together, please let me have their names and Midi-PRG Numbers, just to be sure we’re talking about the same ones.

Colin