



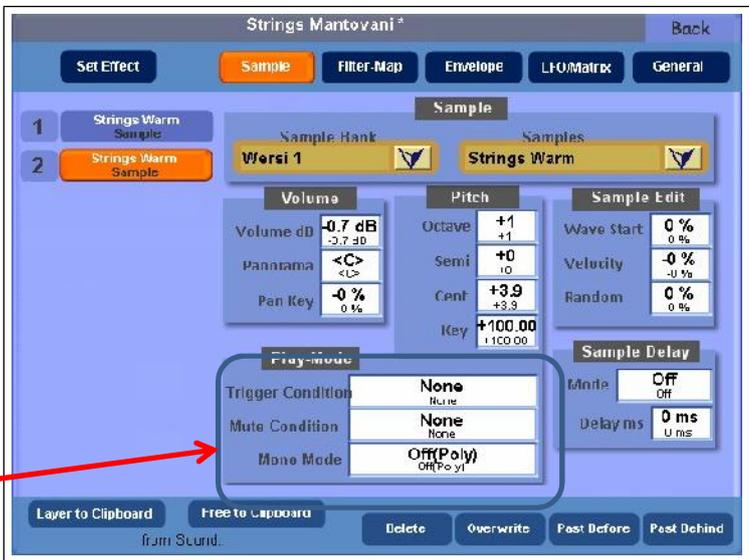
The Wersi Sound Factory Master Classes

Master Class 10 : Autumn 2015 : The Play-Mode Panel on the Sample Page

In this MasterClass we shall be looking at the Play-Mode panel which was introduced into Sound Factory on the Sample Page in OAS-7 Revision 46 in 2012. It has not been covered before in these MasterClasses so we're interrupting the Matrix sequence to provide it now.

The Sample
Page
Showing the
Play-Mode Panel

This is the Play
Mode Panel within
the Sample page.



Modern digital keyboards like the Wersi organ typically provide a facility for layering together a number of different instrumental sounds. This is ideal for when these instruments are required to play in unison. However, for most of the time in musical arrangements the instruments play separate individual parts. The Play-Mode feature in the Sound Factory can replicate this effect by enabling different instruments to be assigned to the individual notes of a chord. The 'Solo-Voice' option on the WersiChord menu is a specific example of this. When activated for a particular sound, and a chord is played, only the top note of the chord will be heard. So we could set this option for a trumpet sound and then layer this with a string sound, the strings will play all the notes in the chord as an accompaniment, but the trumpet will play only the highest note as a solo melody: and all this with just one hand. This and many other Play-Mode functions will be detailed in the following sections of this Masterclass.

Conditions and
Modes

It incorporates three new parameter windows. We can divide these into two sections; **Conditions** and **Modes**.

Conditions and Modes can either be used on their own or mixed freely with each other. Also different Conditions and Modes can be set for each and every Layer that is active in a Sound Factory sound. Some Conditions require a complementary condition to be set in another Layer in order to work/function properly.

Let's start with **Modes** first, as this contains the smaller of the two's subject matter.

MODES

MODES
Mono Mode

Mono Mode

Parameters : Their functions and applications/implications.

Normally, just about every voice or sound that we can play on the keyboards and pedals of an OAS instrument is polyphonic in its nature. What that means is that if you play more than one note on a keyboard all the notes you're holding down sound. This is known as Polyphonic Mode, abbreviated to 'Poly' in Sound Factory, and is the default setting **Off(Poly)** in the **Mono Mode** parameter selector. In other words, **Mono Mode** is 'off/inactive' and **Poly Mode** is 'active/functioning as normal'.

The opposite of Polyphonic is Monophonic, just called Mono in OAS/Sound Factory. When one of the Mono modes is selected, the instrument will allow only one note from this Layer to play at a time. We have certain choices as to which note that could be. Because of the choices, a lot of creative possibilities are available to us.

The Pedal Board is a special case as it can be easily altered from playing polyphonically to monophonically in **Total Preset/Selectors/Mono**. Watch out for this in your Total Presets!

Lowest Mode (Note)/ Highest Note

Lowest Mode
and
Highest Note

Lowest Mode (= Lowest Note): This will always play/sound the bottom note of a chord, for example. You will need two layers to try this, with one layer set to **Lowest Mode** and the other playing normally (**Off (Poly)**). Use two different Samples as well. This will make it clearer to hear. If you have just two notes playing, the layer set to **Lowest Mode** will sound only the lower one. If you play only a single note with two Layers, both will sound the same note together, otherwise known as 'doubling'.

Highest Note: This is straightforward. Once this is engaged only the top note of a chord will sound. (Again two Layers are needed; follow the above paragraph but change the **Mono Mode** in one Layer from **Lowest Mode** to **Highest Note**). If you have two notes, only the upper of those two will sound with the layer set to **Highest Note**. If there is just a single note, both layers will sound that note.

How can we use this feature? We can have a single monophonic lead layer (set to **Highest Note**) on top of a polyphonic layer (set to **Off(Poly)**) in the same sound. For example: a Solo Trumpet with polyphonic Trombones; Solo Clarinet with polyphonic Saxes; Solo Violin with polyphonic Strings. These all use only two layers in Sound Factory to produce a single sound which will occupy only one Selector, whereas normally you would need to use two Selectors.

If we use both the Modes together, **Lowest Mode (Note)** on one Layer and **Highest Note** on another, and keep to using just two layers again, for the first time on an organ, as far as I know, we can play two separate musical parts on one keyboard with one hand. For example:

Quickload **Jazzflute 1 * (090-000-018)** into Selector 1 of the Upper Manual. This sound uses only two layers so you don't have any others to deal with. The first layer is the Sample which is triggered at low dynamic velocities, the second layer is the Sample triggered at high dynamic velocities.

Go to the first layer on the **Sample Page** and delete this layer, leaving what was the second layer to become the first (**Flute Hard**). Go to **Filter-Map/Velocity Switch/Low Vel** and change its current value of 120 to zero. This should now play at all dynamic values.

Go back to the **Sample Page/Play-Mode/Mono Mode** and select **Highest Note**. If you just try this you should have a monophonic Flute. If you play and hold a note with your fifth finger of your right hand, when you play any note(s) below with the same hand or the other none of them will sound until you release your little finger. If you play a higher note, the sound will then jump to that note.

Touch **Layer to Clipboard** and then **Paste Behind** from the menu along the bottom.

Select the second layer, go to **Play-Mode/Mono Mode** and this time select **Lowest Mode**. In the drop-down **Sample Bank** panel select **Wersi 2** and in the drop-down **Samples** panel select **Bassoon**. Go to the **Panorama** and set it to **L64**. Go back to the first layer and set its **Panorama** value to **R64**. This should help you hear the effect. If you are still in doubt, go back to layer two and change its **Octave** setting to **-1** or **-2**. Adjust the volume of the second layer so that neither voice drowns out the other (use -3.0 dB or thereabouts). They work best if their volumes are balanced. From your left speaker you will hear only the Lower Sound (Bassoon) and from the right only the Upper Sound (Hard Flute).

Save this as **Bsn LN, FI HN** (or anything short enough to tell you what sound it is while still fitting into a Selector panel) and then try it on the lower manual (proper counter melodies time!).

Now you can try making some other usable pairs of sounds for yourself.

What happens if there's a third (polyphonic) Layer as well? That will behave as it would normally ie. in polyphonic mode. Instead you could set it up as another top note or bottom note sound.

George Shearing had a small group sound: Piano, Bass, Drums, Guitar and Vibes. The Bass and Drums are easy to recreate: an Acoustic Bass on the pedals; Drums via the Rhythm Unit. The problem has been (in the past) getting the correct arrangement of the Piano, Guitar and Vibes.

The characteristic George Shearing sound is built around the Piano playing closed block-chord harmony with the Guitar doubling the bottom note of the chord and the Vibes doubling the top note. Sometimes the Guitar and Vibes swapped those positions. We can do that as well in Sound Factory. The Piano plays both top and bottom notes and fills in the chord between them. Using the Lowest Mode and Highest Note parameters of Mono Mode in the Play-Mode panel we can duplicate this sound very, very accurately indeed. The Piano plays polyphonically so no change needed. The **Guitar** will need to be set to play the bottom note (**Lowest Mode**) and the **Vibes** set to play the top note (**Highest Note**). Once again balance and panning are important to help bring this off. (See Jeff's Demonstration description under 'Trigger Conditions' below.)

You could apply this to any combination of sounds. With a classical pipe organ for example, it is now possible to have just the lowest note play a 32' pipe on the pedals and the rest of the pedals play, when your right foot feels inclined to join in, a 16', 8', 4' or 2' pipe with a different sound.

If you play two-note chords with your feet, each upper note could have a different sound registration from the lower note with up to five different sounds in each note, should you wish. Make sure, if you do try this, that the **Selectors/Mono** box at the top of the blue pedalboard panel is in **Poly** mode (not ticked), otherwise this will not work.

First Note and Last Note

First Note/Last Note

First Note: If you assign this to a layer and play and hold a single note, then play additional notes either above or below that single held note, those later notes will not sound. The first note played will be the only sound heard.

For example, load **Trombone * (090-000-013)** into Selector 1 of Upper Manual 1. Open Sound Factory and there is just one Sample Layer, Trombone Forte. Assign it to a **First Note** mode. Then touch **Free to Clipboard** followed by **Paste Behind**. An **Empty Layer** will become the second Layer and the sample in the **Samples** drop-down box will be **Trumpet Mezzoforte** (by default). Change the **Sample Bank** to **Wersi 1** and scroll down the **Samples** list and select **Strings Warm**. Now play one note (both sounds are heard). Continue to hold that first note and play a few notes above and below it. The trombone continues to sound just that first note while the strings sound all the other notes you play.

You can get some interesting Brass Ensemble combinations as well: Tuba on the **Lowest Note** with Trombones and French Horns playing polyphonically and Trumpets on the **Highest Note**. Remember that volume/pan balance is the key between these sounds.

Again try out a few of your own combinations to get a feel for how it works and can sound.

Last Note: This one also has some interesting qualities. Using the example above with the Trombone and Strings, change the Trombones' **First Note** mode to a **Last Note** mode. Now play a broken chord slowly, keeping each note down as you add the next. Keep adding the notes and holding all the others. The Trombone will follow the next note added to the chord while the strings play all held notes. The order of notes is not important either. Just make sure that you hold a couple of notes down so you can hear the 'solo voice' (Trombone) move against the sustained notes (Strings). This mode provides a very useful counter melody tool for the Lower Manual: just move a few notes around while holding some others.

There is a downside to all of this in that you do need to be a little bit proficient with your keyboard technique to get the best out of these options. Practice makes perfect.

Jeff's Mono Mode Demo

On the website, Jeff has provided a demonstration of two Mono Mode parameters. First there is an example of the **Lowest Mode (Note)/Highest Note** option followed by an example of the **First Note/Last Note** option, using the final section of 'The Hymn to the Fallen'.

Clarinet and Oboe Combination using Lowest Mode/Highest Note Parameters

In the first segment of the final section of 'The Hymn To The Fallen' by John Williams from the film 'Saving Private Ryan', the orchestration calls for a Clarinet and Oboe duet playing different parts. To achieve this we load the **Clarinet (090-000-017)** sound into a Selector and enter the Sound Factory. On the Sample Page we copy the Clarinet sample and change this copy to an **Oboe** sample taken from the WERSI 2 sample list. The clarinet sample has a Mono/Poly parameter so the Oboe sample also acquires this parameter. Now we set the Mono Mode parameter for the Clarinet to **Highest Note** and the Mono Mode parameter for the Oboe to **Lowest Mode**.

The piece is performed by playing a sequence of two note chords. The Clarinet will take the top note of the chord and the Oboe the bottom.

String Ensemble using First Note Parameter

In the second segment, the orchestration calls for a trumpet duet accompanied by a three part string ensemble, with the middle part of this ensemble being played an octave higher. To achieve this effect we load the **Strings Sustain (091-000-103)** sound into a Selector and enter the Sound Factory. On the Sample page we copy the **Strings Warm** sample and set its Octave value to **+1**. Now we set its Mono Mode parameter to **First Note**.

The piece is performed by playing a three-note chord, but hitting the middle note of the chord slightly ahead of the others to produce the octave. You can hear this most clearly on the final chord of the piece.

In Master Class 9 Jeff provided a demonstration using the first section of 'The Hymn to the Fallen'. You will shortly be able to hear the whole piece, including the as yet unheard middle section, in the latest update to Jeff's 'Wersi Organ Showcase', coming shortly.

CONDITIONS

CONDITIONS

What exactly is a **Condition**?

Normally you can think of it as a form of Gate. It will either be open or closed. When open, audio is allowed to pass through. When closed, audio cannot pass through.

Trigger Conditions

Trigger Condition

So what is a **Trigger Condition**?

We have all been using these for years, many of us without realising that they are being used. The 'power' button on an electronic organ is a trigger condition; if it is not active, no sound! That's a 'trigger condition'.

The keyboard we play is a set of trigger conditions; if you don't play a note, you'll get nothing. Switches are also trigger conditions. When we turn the Drums on and off, that is a trigger condition.

What Wersi has done is to take this idea a step further on an organ by adding an extra couple of conditions to each and every layer in Sound Factory. We have the choice to use them or not. If we don't use them, nothing has changed from what we have had before with the instrument and you can continue to use/play the instrument in the same way. If we do use them, we add more possibilities into the 'cooking pot' for sound control/creation and performance.

The next step involves a little bit of preparation before we can jump in and try these for ourselves.

Pick an empty Total Preset (= Standard Preset). From the **Main Menu**, go into **Selectors/Advanced** and make sure that the **MW** (Mod Wheel) is on with a check in its box in **Upper 1**. Also on this page, turn off **Dynamic** by removing the check mark from **Upper 1** box.

Next, go into **Acc/Advanced/Footswitch Settings**. Make sure that you select **Sustain all manuals** for your chosen foot switch.

The last thing to do here is select a sound. In order to be able to compare results easily and predictably, Quickload **Strings Sustain * (091-000-103)** into Selector 1 in the Upper Manual.

With **Strings Sustain *** selected to be edited, go into Sound Factory/Expert Edit.

On the **Sample Page** you will see that only a single layer is active. The other important thing, and another reason for picking this sound, is that on the **Matrix Page** none of the modulations are active so we will not get any surprises when we start to impose extra trigger conditions on the **Sample Page**. Play some notes while moving your **Modulation Wheel (MW)** to maximum: the MW appears to do nothing at this point. Return it to zero for now.

Still on the **Sample Page**, highlight the **Trigger Condition** parameter box. At the moment it should say **None**. This is the normal state to select if you want to play your instrument normally. This value will always be selected by default.

Mod Wheel Up

Mod Wheel Up

Let's add a **Trigger Condition** to this layer. Select **Mod(e) Wheel Up** in the **Trigger Condition** display. Now play your Upper Manual. If your MW is in the minimum position you will hear nothing. If you push the MW to the maximum position the Strings Sustain sound will play again. Play with this to get a feel for it and you will notice that the activation/de-activation point is half way into the MW range.

We have turned the Modulation Wheel into an off/on switch. The MW is still sending its full range of values (0-127), but the condition in this case interprets values 63 and below as **off** while values of 64 and above are interpreted as **on**. This occurs in some Sound Controls parameters also.

So how can we use this feature?

Well, it is a way to add/bring in more layer(s) to mix with an existing layer(s). Try this example.

On the **Sample Page**, touch **Free to Clipboard**. You should see just below these two left touch buttons: 'Empty Layer from Sound: Testsound', appears.

Touch **Paste Behind**.

A new second layer will appear. By default this is a **Trumpet** as we saw earlier.

Before you go any further, go to the **Matrix Page** for the **Trumpet** layer and switch all the **Sources/Modifiers/Destinations** to **Off**. The values don't matter now but you can set them to zero to make sure.

Put your MW into the minimum position and play the Upper Manual. You will hear only a Trumpet sound. Release the note you played and now move your MW into the maximum position. Play a note on the Upper Manual again and you will hear Trumpet and Strings. The change occurs as the MW moves across its midway position but the sound does not change until you trigger another note.

To prove this, play a note or chord with the MW at minimum and then change the MW to maximum without replaying any notes. The Trumpet will continue to sound on its own. If you then play a note(s) or chord on the Upper Manual with the left hand (still holding with the right hand your original notes), you will hear the Trumpet and Strings but only on the new notes. So in a nutshell we have a way to bring in extra Layer(s) of sound(s) to any original Layer(s) of sound(s).

This can also be made to work the other way around.

Just change the Trumpet **Trigger Condition** to **Mod Wheel Up**. Go to the Strings Layer and select **None** as its trigger condition. They will now swap places, with the Strings being present all the time and the Trumpet active only when the MW is in a position greater than half way.

This is a way of adding stops to an organ sound; or starting with a solo voice and bringing in an orchestra behind it; or adding octaves to Strings or Piano for certain passage work. The possibilities are endless.

Mod Wheel Down

Mod Wheel Down

This is the reverse of the **Mod Wheel Up** function. In other words it has an **On** range with the MW set from minimum (0) to 63 and an **Off** range when the MW is set between 64 and maximum (127). Try this with the previous experiment and you will find if you assign **Mod Wheel Down** to one layer, Strings for example, and **None** to the Trumpet layer, the Strings will play with the Trumpet when the MW is less than half way and the Trumpet will be solo when the MW is at a value greater than half way.

So what happens if we now try to combine these two **Trigger Conditions**?

First, select your Strings layer and in **Trigger Conditions** select **Mod Wheel Up**.

Next, go to your Trumpet layer and in **Trigger Conditions** select **Mod Wheel Down**. Then have a play.

We have now created a registration change which 'switches' sounds when the MW is moved from lowest to highest setting (it's more secure using the extreme positions of the MW).

This is much more accurate than trying to use the 'Touch Screen' when performing. Remember we can assign these trigger conditions to any and all active layers in a Sound Factory design. A single Total Preset can therefore contain two different registrations, all Selectors being changed merely by moving the MW.

The advantage of this is that we can perform small/medium/large changes very easily and quickly using the MW only, and it's accurate! It also changes only the sound once you trigger/play new notes, so you can perform the change before you actually need it! For example, hold some notes or a note of a large duration, flip the MW with your left hand, and only when you then play new notes does the change to the other sound(s) occur.

You could have some sounds changing or all sounds changing, within one Total Preset. If you have some non-edited sounds in the mix, you would need to check in Sound Factory/Matrix whether the MW was listed anywhere. If it is, you cannot use that sound in the mix unless you edit it first to change that MW to Off in the Matrix.

Sustain Up & Sustain Down

Sustain Up & Sustain Down

These two act in almost the same way as the previous MW examples, so everything in the previous section applies to these two as well.

There are, however, a couple of differences between how the **MW** behaves and how the **Sustain** behaves. That's what we need to look at now.

Mod Wheels (MWs) are not generally 'sprung' (and shouldn't be in my opinion) and are a way to provide constant values of varying sizes to other parts of the system. You can think of it as a 'pot' or a 'knob' for example. If they are 'sprung', they become more like the 'Pitch Bend Wheel' that returns to zero after supplying a new value: not good for supplying constants which are helpful and indeed needed in a system like this.

Sustain switches are different in that they are able to supply only one of two possible values at any time: zero and one, also known as 'Off' and 'On'.

A Sustain switch has a normal 'passive' state in which case it is considered to be 'Off' or inactive. Once activated it flips its state and supplies an 'On' value. This is important because in order to flip its state to active we must maintain the switch somehow in an active position. Normally we control this with our foot. As soon as the foot releases its pressure, the Sustain switch will flip back to its passive state sending a value of zero. So, in a sense, it is sprung!

When we use this in a **Trigger Condition**, things get complicated because the original function of the **Sustain Pedal/Switch** will also activate and take effect at the same time!

Go back to our Trumpet and Strings example. Set the Trumpet Layer Trigger Condition to **Sustain Down**. Advance fully the MW and the Strings will play on their own until you press the Sustain switch of choice; then the Trumpet joins in. But because of the fact that the Sustain already has a job or function assigned to it, we get a sustained Strings and Trumpet sound (which can quickly become a very muddled sound if you keep the Sustain footswitch 'On' for too long).

This is the problem with these two conditions! However, if you change the Trumpet layer into a Piano or Harpsichord for example, this then becomes a very interesting option to use. If you try this, use a sound that would normally have a percussive envelope like those I have just mentioned, or a Vibraphone, Guitar, Harp; as long as its normal behaviour is enhanced by the use of the 'Sustain Pedal'.

When you play now, the extra instrument of choice comes into play only when the 'Sustain' pedal is activated.

There is a bonus to this as well.

Because the 'Sustain' is capable of being active on any keyboard manual at any time, if you save your combination of Strings and 'whatever' you can now place this onto the lower manual as well, and the best bit is it will function as it did on the upper!

If you use the other option **Sustain Up** it reverses the function as before, but because it is more specialised I tend to assign instruments that don't like being held by the sustain pedal. For example, I combined a Piano with some French Horns that only played when the sustain pedal was off. As soon as I pressed the 'Sustain' pedal, the Horns were then 'muted', allowing me to play my Piano runs across the instrument without the Brass sounding and getting in the way. Wonderful!

Once again, have a play with all of this. If you manage to work through all of it you might want to try adding bits from the **Mono Mode** into the 'mix' as well. The possibilities are staggering when the content of this Master Class is combined into some programming: lots to think about and try.

In his second mp3 demonstration, Jeff has provided an example of two Trigger Condition parameters that use the Modulation Wheel, **Mod Wheel Up** and **Mod Wheel down**. We will create the classic George Shearing sound by combining a polyphonic piano with a monophonic vibraphone and guitar. We use the Mod Wheel to swap over the assignment of the vibraphone and guitar, first with the vibraphone on the top note and the guitar on the bottom, and then vice versa.

Jeff's Trigger
Condition
Demo

George
Shearing
Sound with
Mod Wheel Up
& Mod Wheel
Down
Parameters

In this extract from George Shearing's jazz classic "Lullaby of Birdland" we utilise the Mono Mode **Highest Note/Lowest Mode** parameters in combination with the Trigger Condition **Mod Wheel Up/Mod Wheel Down**. To achieve the required effect we first have to load a sound with a Mono/Poly parameter into a Selector, for example the **Clarinet (090-000-017)** sound, and then enter Sound Factory. On the Sample Page change the Clarinet sample to a **Vibes** sample from the WERSI 1 sample list. Next, go into the LFO/Matrix page and change line 2 (Mod Wheel) Modifier and Destination boxes to 'Off'. Then make a copy of this **Vibes** sample and change it to a **Jazz Guitar** sample, also from the WERSI 1 sample list. Now copy both the **Vibes** and **Jazz Guitar** samples so that we now have 4 samples, two **Vibes** and two **Jazz Guitars**. Finally make two copies of any one of those samples and change them to **Grand Piano L** and **Grand Piano R** respectively from the WERSI 1 sample list.

For the first pair of **Vibes** and **Jazz Guitar** samples set their Mono Mode parameters to **Highest Note** and **Lowest Mode** respectively and their Trigger Condition to **Mod Wheel Down**. For the second pair of **Vibes** and **Jazz Guitar** samples set their Mono Mode parameters to **Lowest Mode** and **Highest Note** respectively and their Trigger Condition to **Mod Wheel Up**. For the two **Grand Piano** samples leave them in their default Mono Mode and Trigger Condition settings (**Off(Poly)** and **None** respectively).

The piece is performed by playing block chords. The Piano plays all the notes of the chords. Initially with the Modulation Wheel down the Vibes play only the top note of a chord and the Jazz Guitar only the bottom. Later in the piece with the Modulation Wheel up, these positions are reversed.

George of course didn't have to concern himself with such manoeuvres: he had a whole quintet to do it for him!!

Odd Patch-
Note
&
Even Patch-
Note

Odd Patch-Note & Even Patch-Note

These two functions appear not to be working properly. Perhaps that has been corrected in the OAX Sound Editor.

Odd El.Note & Even El.Note.

These two would appear to be designed to work as a pair. You can use just one if you want to, but the real joy happens when both are working as a team.

Let's go back to our **Strings and Trumpet** test patch from before.

Delete the Trumpet for now, leaving the Strings Layer on its own again. Assign this Layer with the Trigger Condition **Odd El.Note**.

(I think I saw somewhere that 'El' stands for 'Element' which in this case appears to mean the same as a 'Layer'. So you can think of this as 'Odd Layer Note(s)').

If you try this now you'll find that only every other note will play!

Touch **Layer to Clipboard** then **Paste Behind**. Then change this second layer or the other one, it doesn't matter which, to **Even El.Note**.

Now if you play the Upper Manual you should have all your notes playing again! If you still have every other note missing this is what needs to be done to sort it out!

On the **Sample Page** for your current layer, touch the number to the left of the layer's name to change it to an orange **M**: this mutes the layer. Then play one and only one single note on the upper manual, being careful not to touch any others.

Now un-mute that Layer by touching the **M** button, returning the number of that layer and this should sort out the triggering from the keyboard for that layer.

Now you should have all your notes playing again. So, what's the point of all of this?

We have got two layers. In the first, change the **Pan** value to **L64**. In the second change its **Pan** value to **R64**. Then play the keyboard, single notes slowly up/down a scale or chord. The sound swaps sides on each note. The two layers are alternating.

At this point you can try a few pipe organ stops with each other; it's not quite a 'C', 'C#' split* but it does help open up the sound!

Odd El.Note
&
Even El.Note

** In Church Organs, the builders found that if they split the keyboard into two halves, the separation of the pipe work improved the delivery of the sound to the Organist, congregation or audience. When I say split I don't mean the type of split we normally see/hear in OAS. The builders divide the notes into two 'whole tone' scales. The first is based on 'C', and progresses as 'C, D, E, F#, G#, A#, C, D, E' and so on across the keyboard from the bottom note to the highest note. The second scale starts on 'C#' and progresses across the keyboard:- 'C#, D#, F, G, A, B, C#, D#' etc. This is referred to as the 'C, C#' split.*

Let's take this a step further.

Change one layer's octave setting to +1.

Now try this. If you play single notes, as in a scale, the 'melody' jumps around the octaves (not really helpful). However, if you play chords with this (using one hand only), you get instant 'open harmony'.

You can try this with all the ensemble sounds that you can think of; Strings as above, Brass, Woodwinds; they all sound good! If you try Brass or Woodwinds, use a different sample from the same family of instruments and you'll get instant arranging as well!

This works really well for the Lower Manual accompaniments. Just being able to have the Strings playing wide intervals with one hand is great. If you don't like the arrangement of notes, just re-trigger the same chord and the **Trigger Condition** will give you another order of the same notes (Tessitura).

Try mixing different sections of instruments together with different families as well. Some of them are astonishing to hear coming from one hand.

No Arp

No Arp

This also appears to have no effect.

Mute Condition

Mute Condition

None

This is straightforward as it basically turns **Off** all the possible other options for this parameter. This allows the instrument to behave normally.

Mute Same Note

Going back to our Strings and Trumpet example earlier, mute the Trumpet for now and select the Strings layer to be edited.

Sometimes you'll hear an electronic organ being played where the Strings have an extremely high Release time. In Sound Factory we can duplicate this by going into the **Envelope Page** and change the **Release** time to a value of **5.00 s** or higher.

Excessive, but bear with!

When you play the Upper Manual, sure enough the notes all run into each other. But the real problem occurs if you repeat/reiterate the same note, one after another. For example, play a 'G' above middle 'C' and keep re-triggering it a few times. You lose the definition of the attack; all you can hear is the 'G' ringing on.

Go back to the **Sample Page** and go to the **Mute Condition** parameter window and select **Mute Same Note**.

When you play the keyboard now, you still get the notes running into each other when you play a scale or arpeggio. However, when you now repeat the same note you can hear the start of each and every one that you play.

What this condition is doing is comparing the first note's 'position value' on the keyboard with the next note played. If the next note is different from the first, this condition does nothing. If however the note is identical then this condition becomes active, 'muting' the first note played by 'pulling' its release time to zero, then injecting a small gap (from the sound of it approx 5 - 10 ms at a guess), between the two note events and then allowing the second note to trigger from the start phase of its envelope shape.

In fact I think it is cleverer than that, because it appears to remember the entire note 'position values' for the entire **Max. Voices** allocation number found in the **General Page**. If this number is set to twenty it will compare all twenty in its memory. If it finds a voice that is still active in its envelope cycle is about to be duplicated, the condition will be activated and remove the old version so the new one can be heard from the beginning properly. No more lost 'melody' amongst all those long release times.

If you increase the envelope **Release** time (and we can put in an extreme amount, up to 32.00s!), you will hear all of your new notes start regardless of the time set.

To demonstrate the remaining options, we are going to make a few adjustments to our original Strings and Trumpet example.

Select a Standard Preset and load **Strings Sustain** into **Selector 1** of the **Upper Manual**. Open **Sound Factory/Expert Edit**. Then as before, load the **Trumpet** into the next Layer. (Free to Clipboard>Paste Behind.)

We are going to split the keyboard using Sound Factory only on these two sounds.

Remember that Sound Factory allows the user to set the key range (using **Filter-Map/Key Switch**) and the velocity range (using **Filter-Map/Velocity Switch**) for each individual Layer. These can be really very simple, as this one will be, or incredibly complex. This is much more flexible than the standard OAS keyboard split options. This also works on all the manuals and the pedals.

Select the Strings Layer, go into **Filter-Map/Key Switch/High Key** and change its value to **C3** (middle C).

Then select the Trumpet layer, go into **Filter-Map/Key Switch/Low Key** and change its value to **C#3**.

We have now created a split point between these two sounds. The Strings will play on the left hand side, the Trumpet on the right. You will want to move the Strings sound up an octave (**Sample/Pitch/Octave** to **+1**) as this will give you a more useable range on the left side of the split for playing some chords. The Trumpet value can stay as it is.

The really important thing in this to remember is that although these two sounds act like separate layers, and for all intents and purposes can have completely different programming applied to each of them, they are still connected. They are connected by the fact that they are contained within the same Sound Factory construct, and that means they are able to communicate with each other!

Play-Mode/Mute Condition/Mute Group (1 - 5).

Mute Group 1 - 5

To prove that they are connected, but only when we want them to be, in the **Mute Condition** select the option **Mute Group 1** in both Layers. They are now connected.

Result: you can now play the Trumpet on its own, you can play the Strings on their own, but you cannot play them together! One Layer will cause the other to be muted. It doesn't matter which is playing first, as soon as the second part starts the first part will stop.

There has also been a change in the **Play-Mode** which is not indicated in the **Mono Mode** parameter box. They are now both monophonic! They both behave as if **Last Note** had been selected in the **Mono Mode** box.

The rest of the Mute number Groups (2 - 5) all have the same implementation and function: any layers that share an identical mute number group will behave together just as the Strings and Trumpet did. There is a condition for this to all work: the key split (set in **Filter-Map/Key Switch**). If you remove the split, basically by putting the values we changed back to their original settings, the condition cannot function correctly. All it can do is turn the selected Layers from Poly to Mono. It doesn't know which one to mute, because you are supplying identical notes or 'note values' to both layers.

Mute Other Elements**Mute Other Elements.**

If you have tried the above, return your Strings & Trumpet sound back so the split is in place again. This time, in the **Mute Condition** box select **Mute Other Elements**. If you select this option for both layers you will get the same as before with **Mute Group 1**, though this time the sounds will be polyphonic and just turn each other off. Use this in just one Layer and that Layer will turn off all other Layers while you are playing keys in its area of the keyboard.

Mute Whole Patch**Mute Whole Patch.**

This is almost identical to **Mute Other Elements** but it turns the layer with the **Mute Whole Patch** into a monophonic instrument and leaves the other layers as polyphonic instruments. This has a few possibilities.

Combining **Mute Condition/Mute Whole Patch** with **Trigger Condition/Mod Wheel Up**.

Remove the split first from both layers, and as before the instrument has trouble trying to figure out what to do. Then, to the Trumpet layer add the **Mod Wheel Up** Trigger Condition. With the MW at zero, you get Strings only. With the MW at maximum you get the Trumpet but it is monophonic and it mutes the Strings.

If you think that sounds familiar, you'd be right. We can program this into the Trumpet by using **Mod Wheel Up** in the Trigger Condition and by selecting **Mono Mode/Last Note** for example. Go to the Strings Layer and put **Mod Wheel Down** in the Trigger Condition and you now have Strings playing polyphonically when the MW is low and the Trumpet playing monophonically when the MW is high.

In the next Master Class we shall return to the Matrix.

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