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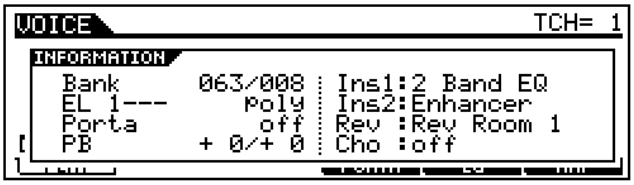
Motif/S90
Power User:

Learning to Customize Piano Voices to Your Playing Style

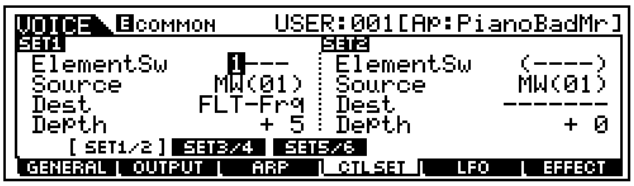
Included with this Power User is a Voice bank. We will concentrate on the Piano in this particular article. The ALL VOICE file (actually a pair of files) that is associated with this article will allow you to load just the single Voice we will be discussing. You can load it to any User location. It is provided for both the Motif (Tutorial.s2v and Tutorial.s3v) and the S90 (Tutorial.s4v and Tutorial.s5v). If you are using the Motif please transfer both the .s2v and .s3v files to your SmartMedia card and if you are using the S90 please transfer both the .s4v and .s5v files to your SmartMedia card. The Voice data is the same just formatted for each keyboard. The files will be contained in a zipped file (use Win-Zip or other utility to open them). Copy them to your computer and use FILE UTILITY or a SmartMedia Reader/Writer to move them over to your SmartMedia card.

Load Procedure:
Transfer the appropriate files to your SmartMedia card and select the FILE/(CARD) function.
Press F3 LOAD; Select the **VOICE** type. Highlight the file name TUTORIAL.S2V for Motif; (TUTORIAL.S4V for the S90) and then press ENTER. This will open the file and show you a list of NAMES. The Voice in question is at USER:001 and is called "PianoBadMr". Highlight it and target a USER location that you wish to write over. Press [ENTER]/ [INC/YES] to execute the load and then press STORE to store it to your USER bank.

How to Explore the Voice
Once you have successfully loaded this Voice to a User location: Press the INFORMATION button to learn about the basics of this Voice.

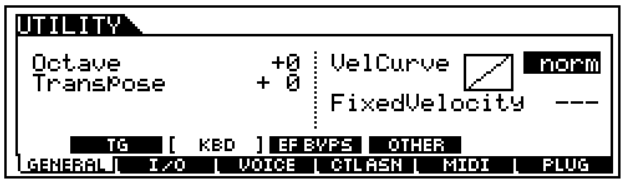


You will see that it is a single Element Voice, loaded to Bank 063/008 (your USER bank). No portamento, Pitch Bend is set to 0 (this is a piano after all). The INSERT 1 Effect is set to a 2-band EQ, and the INSERT 2 Effect is set to the ENHANCER (a little psycho-acoustic modulation). The REVERB is set to REV ROOM 1 (to simulate a piano box) and no Chorus (this is an acoustic piano, after all). Feel free to EDIT this Voice to your own liking. That is the whole point of this exercise. Go to the CONTROL SETS and view the settings. To do this press: [EDIT]/[COMMON]/[F4]:CTRL SET.



Here you will find that a single of the 6 sets is used to set the initial FILTER position. It is critical to set this to *your* playing style. It is not a controller that you will be actively moving during play…this is a piano after all! It is there to 'set and forget'. I purposely use the MW because it is a controller that you can use to mix and/or balance. (I hate those keyboards where the modulation function is spring loaded, because you can't use it for a mix control). With the MW down, when you play softly the sound is dark. As you move the wheel up, and you play softly the sound will be brighter. What you are to set with this control is the dark or damped sound when you are playing softly. When I brought this Voice to our annual Winter Meeting a few weeks ago and let the other Product Specialists play it, each player will have a different touch. If I set the parameters for *my* touch, inevitably another player would find the 'soft' setting too dark or too bright and of course, the song/style you choose to play will also make a difference. Therefore, I programmed the MW so that each player could find their favorite 'soft' setting, easily. By the end of this article, hopefully, you will know exactly where to go to influence this critical setting.

It's OKAY not to be NORMAL
While we are discussing 'different strokes for different folks', you should know this about your Motif/S90 (or any touch sensitive synth) and your playing style…you can set the overall response as to whether you play heavy handed, or you have a light touch. This is not a value judgement, far from it, it is a matter of whether you play heavier than the average player, or lighter than the average player. You should spend a fair amount of time experimenting with the overall VELOCITY CURVE of your keyboard. This parameter is global and is set in UTILITY/ F1 GENERAL/ SF2 KBD.



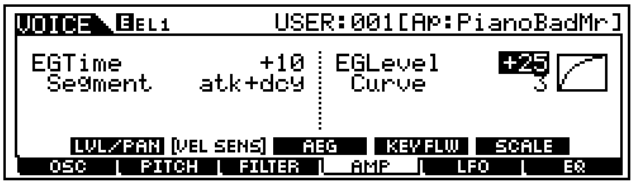
You will find settings for 'NORM'. Norm is the average guy, remember him from Cheers?…er, NORM is linear response. Do not feel that you have to be normal, you may not be – this can be a good thing. SOFT is a setting for people who naturally have a light touch. The little graphic shows that it takes less effort to get loud. The 'x' axis (horizontal) is increase in velocity/effort and the 'y' axis (vertical) is the volume/response output. HARD is for those who tend to be heavy handed. If you are heavy handed, don't apologize…simply set your Velocity curve so that it takes more effort to get loud. WIDE gives you a mix of the two. (FIXED is a special case.) One of these will be closer to "right" for you, and the others should feel like you have your shoes on the wrong feet!!! Only **you** will know what is right for you though, in this case. It is all right to have an opinion here – in fact definitely **have** one.

Keyboard Velocity Curve is an overall setting. However, each Voice can be tailored to your touch response on a per Voice basis, as well. And that is what we will take a look at now.

Filter and Amplitude Touch Response…

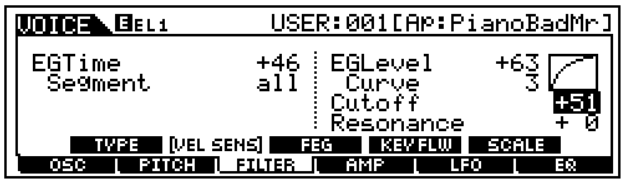
The three basic areas of control on both analog and sample based synthesis are Pitch, Filter, and Amplitude. There is little or no *significant* movement in Pitch during the playing of a piano note – what there is, is already recorded in the attack portion of the waveform. Therefore, we will be concentrating our discussion on the Filter and Amplitude portions. The Filter is responsible for "tone" or harmonic content control. And Amplitude is "loudness". How these parameters respond to your touch are the parameters we will look at now. It is true in nature that the harder or more energy you put into playing a musical instrument, the louder in volume and brighter in tone it becomes. This is the domain of the Amplitude and Filter Velocity Sensitivity controls.

Press EDIT/ Touch Track 1 to select Element 1/ F4 AMP/ SF2 VEL SENS:



EG Time and EG Level here influence how the Amplitude Envelope Generator changes to your touch. An Envelope Generator is responsible for how something (in this case loudness) changes over time. The EG Time = +10 means that as you play a key with more velocity there is an increase in attack and decay portions of the envelope. EG Level = +25 with a Curve = 3 influences a change in loudness with an increase in velocity. The Curve of 3 makes it fairly easy to get this change. Try a different setting for EG Level and see how it affects the overall response of the Voice. Try a different Curve and see how it feels. Learn to use the EDIT/COMPARE function. That is, after you have made a change to a specific parameter you can press the EDIT button again (it will begin to flash) – this will place you in COMPARE mode. While in COMPARE the values you have edited but not yet STORED are returned to their previous value. You can play and hear the original values. Press EDIT/COMPARE again to return to the values you have changed. (Please be aware that while in Compare mode you cannot make any further changes to values).

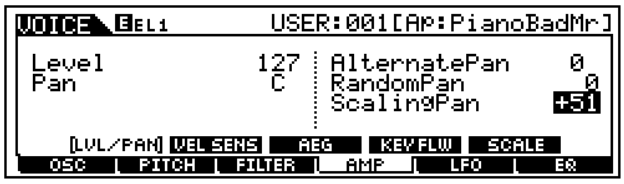
Press F3 FILTER/ SF2 VEL SENS: to view the FILTER's response to Velocity Sensitivity.



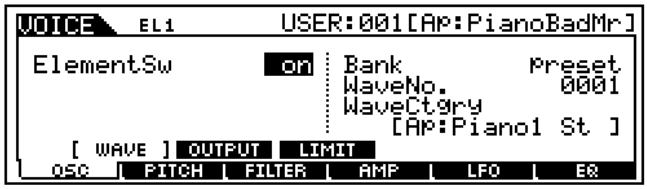
Experiment with different settings for the CUTOFF of the filter. This influences the brightness-to-darkness in the sound of the Voice and how it changes to Velocity. CUTOFF is technically the point (Frequency) at which the filter starts being affective. CUTOFF VELOCITY SENSITIVITY refers to the change in the filter to velocity/touch response. As you move this parameter notice how it affects the sound of the piano, as you play soft to loud. Negative values will reverse what occurs naturally in physics. In other words, in nature as you increase the energy to a musical instrument the brighter it will sound, but negative numbers will darken the sound as you play harder.

Other Subtleties

The position of the player: When you play a real acoustic grand the low notes are on your left and the high notes are on your right. Can you give this 'feel' to the piano Voice? To do so we need to go back to the AMP: Press F4 AMP/ SF1 Lvl/Pan



On this screen notice that the Scaling Pan = +51. This will only be important to those of you listening to the Voice in Stereo (and you should be). This will place the low end of the piano in your left speaker and as you go up the keyboard chromatically it will pan to the right. High notes will be in the right speaker. This is either enjoyable or not. If you want to eliminate the pan scaling effect, set this parameter to 0. Also on this screen are the overall LEVEL of Element 1, and the PAN position (which should remain C or Center because this is a Stereo wave). No discussion of editing would be complete without knowing exactly where a VOICE 'points' to a waveform (what Yamaha calls an ELEMENT). In this case the Element is a multi-sampled ROM waveform. Press F1 OSC (Oscillator)/ SF1 Wave.

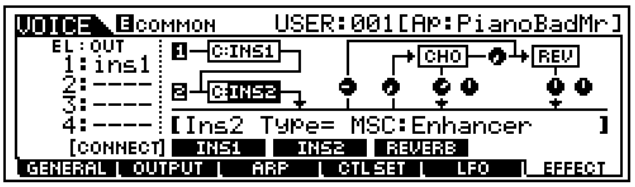


This is the screen where a VOICE points to a specific Wave Number. You can see our PianoBadMr Voice uses the Preset wave number 0001 "Acoustic

Piano: Piano1 St" The 'St' = stereo. An Element in Yamaha language can be stereo. (It can be a velocity swap, as well.) Those of you with an S90 might want to substitute WaveNo. 1346 or 1347 for WaveNo. 0001, as an alternative. Those are the Triple-Strike Stereo waveform Elements.

EFFECTS

While still in Voice EDIT, press the COMMON button to select the COMMON Edit level. On this level of editing you can reach parameters that will be applied to the VOICE overall – like controllers, effects, arpeggiator, an overall LFO (Common LFO – although each element has its own Element LFO, as well), and the overall level of the Voice.



Here you will find the INS1, INS2, CHO and REV. Of the four Effect processor units available only three are used on this particular Voice. This screen is very important to understand. Signal flows from left to right. On the left you have a list of the four possible ELEMENTS. We know that this piano Voice is a single element – therefore you see just an assignment at EL:OUT for just ELEMENT 1. It is routed to INS1 (INSERTION EFFECT 1). Move the cursors to highlight 'INS1' in the screen and it will reveal that it is assigned to a 2-band EQ. SF2 will let you review the settings of this equalizer. Follow the routing from INS1 to INS2. INSERTION EFFECT 2 is assigned to an ENHANCER. This will alter the harmonic content subtly. The signal then returns to the main left to right flow. Notice how you have a send with an amount control going up and over to the REVERB processor. This is followed by another send (at 0) going to the CHORUS processor. Both the CHO and REV boxes have a 'return' level that returns signal to the main left to right flow, and they each have a PAN control for the return. In between the CHO and REV boxes you have an amount control that controls how much of the signal that is 'post' the Chorus will arrive at the Reverb. This means that you can send signal individually to the REVERB and CHORUS (called *parallel*) or route one into the other (called *series*). This can make a huge difference if, for example, you set the CHORUS processor to a DELAY. When you send signal in series (through the Chorus' DELAY prior to going to the REVERB) **each** repeat would have reverb. If you route the signal in parallel only the original note would have the reverb, while each repeat would be bone dry (devoid of reverb).

Anyway, hope this has got you to the point where you now feel comfortable going into a Voice and making it your own. Most people can work EQ and Effects but become hopelessly lost when it comes to FILTER settings and AMPLITUDE settings that are often the critical part of how a Voice responds. And guessing can only get you so far. This tutorial by no means is complete…we did not get into the FILTER ENVELOPES and AMPLITUDE ENVELOPES themselves. Nor did we get into the ELEMENT EQ (F6) which can be configured as a single band parametric, a 2-band EQ or as a dB BOOST.

Don't become discouraged if you can't master the synth after reading the manual once. With over a thousand parameters you cannot expect to be a genius immediately. But don't let it interfere with your music. Like learning music, take it a little at a time. The toughest part is playing the actual music, not the programming. And although learning about programming **is** your responsibility, it will take a lot less time to master the synth engine then it takes to master being a good musician. That is a fact! Give it some respect though.

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