Roland JV Master Class: The ABC's of Editing Tones & Performances

AS SEEN IN KEYBOARD MAGAZINE

There's a lot more to Roland's JV series instruments than just playing the factory presets. If you've been playing your JV synth for a few months now and you're ready to take it to a deeper level, read on; in this article we'll talk about Tone layering, controller routings, setting up Performances for sequencing, and some little-known parameters that can add new colors to your music.

The tips in this article are for the JV-80, JV-90, and JV-1000. While all these instruments are based upon the same synthesizer engine and have basically the same parameter displays, the JV-90 and JV-1000 have very similar front panels, while the original JV-80's is slightly different. If there's a difference in procedures, patch numbers, or buttons, those for the JV-80 will follow in parentheses. However, it may be necessary for you to consult your owner's manual to find the display pages under discussion.

Most of these tips will apply to the rack-mounted JV-880 as well, but its front panel is naturally compacted, though most of the parameters discussed can be accessed. The new JV-1080 is based on a more advanced processor, and though many of these tips can be employed by it as well, the JV-1080's panel and menus are significantly different. The JV-30, JV-35, and JV-50 do not provide the user access to many of the parameters we'll discuss.

Panel Tour

Before we get inside the JV, we need to be familiar with some important portions of the front panel. First, each of these instruments has mode buttons - Performance, Patch, Rhythm, and V-EXP (Performance Play/Edit and Patch Play/Edit) - that are used to select the current mode of operation. Each has eight buttons on the lower left side and eight sliders, collectively known as the Edit Palette. As you press any of the Edit Palette buttons, the respective parameter is called to the display, and the sliders can be used to edit its value. The Edit Palette buttons will call different parameters depending upon which mode you're in: Performance or Patch, Play or Edit, etc.

Also important is a set of eight Function buttons (different locations on each model) labeled tune, effects, control, and so on. These buttons have multiple functions as well, depending upon which mode you're in. Each is multi-labeled with a pointer to its function in each mode (color-coded lines on the JV-80).

Finally, under each display are eight buttons. In Patch mode, these are the four Tone Switches and four Tone Select buttons. In Performance, they are the eight Part Switches.

Architecture & Terminology

To make sure we're all speaking the same language, let's continue with an overview of JV terminology and the basic synth architecture. We'll begin with JV basics: Tones and Patches.

But first, just what does that word synthesizer mean? Let's call it a device that uses electronics to create and control sounds. JV synthesizers, like many others, create their sounds from digital recordings, usually referred to as samples or waveforms, stored in ROM memory. Those waveforms can be controlled in pitch, loudness, and frequency content, then combined to produce the sounds you hear when playing the keyboard.

How do the JV synths accomplish this? Each Patch you call up is a combination of from one to four Tones. Each Tone is essentially a complete synthesizer voice. In a tone, one of the JV's waveforms is processed by pitch controls, an amplifier, a resonant filter, two LFOs, modulation routings, and effects. (See Appendix 1 — "Reading, 'Riting, & Roland" — for definitions and explanations of Roland synthesizer terminology.) The ability to layer these "mini-synthesizers" into Patches adds to the richness and realism of the sound.

At a higher level than the Patches reside the Performances. A Performance is a collection of seven Patches and a Rhythm Kit. Each Patch is assigned to one of the Performance's eight Parts, and can be layered, split across the keyboard, or assigned to its own MIDI channel for sequencing applications. Performances also control the JV's MIDI master controller features.

Patch mode

Palette vs. Patch Editing

Call up Preset Patch A17, "MIDIed Grand." The Tone Switches under the display light to indicate this Patch uses Tones 1, 3, and 4.

It's important to understand that there are two distinct methods to editing Patches and Tones on the JV synths. First, the Edit Palette is almost always active. When you first turn on the JV, your display should indicate "TVA Level," corresponding to the lighted level button in the Edit Palette. The display shows the volume level for each of the Tones. Now move sliders 1 through 4 to control the volume levels of the respective Tones (slider 2 has no audible effect, as Tone 2 is muted). This is the essence of the Edit Palette - that you have continuous access to a single parameter for all four Tones simultaneously. Simply pressing pan, tune, cutoff, attack, etc., in the Edit Palette will provide instant access to the desired parameter, and the first four sliders can be used to edit its value. Under each Edit Palette button, however, is actually a complete menu: The up and down arrows in the display indicate there are additional related parameters. Under level, for instance, pressing the up-arrow button gets you to the TVA's Velocity Sensitivity and Velocity Curves. In fact, you can access most of the JV's editing parameters under the Edit Palette's buttons. In addition to providing for quick and easy editing, the Edit Palette is especially useful for changes during live performance, allowing you to "remix" a Patch in real time.

The second editing method is Patch Edit. Press edit (Patch Edit) and the TVA function button (not the Edit Palette button). Notice that Tone Select 1 under the display now lights, and you see "1---" above TVA and several amplifier parameters, including the same Level (Lev), Velocity Sensitivity (Vel), and Velocity Curve (Crv) values we saw for Tone 1 in the Edit Palette. Press Tone Switches 3 and 4 to mute those Tones. Now we are both listening to and looking at the values for Tone 1 only. Once again the sliders will edit the corresponding values in the display. You can also use the cursor buttons and inc/dec buttons to change values.

Pressing Tone Select 2 changes the display to "-2--" and shows the TVA parameters for Tone 2. You can press multiple Tone Selects simultaneously to edit multiple Tones at the same time. Asterisks in the display, like "1**-", indicate that you're looking at Tone 1, but that other Tones will be edited as well. (Keep in mind that we must enable Tone 2's Tone Switch in order to hear it.) Also notice that again we have a down-arrow in the display, indicating there are more TVA parameters just a cursor-down away. To get to filter settings, tuning, or other Tone parameters, simply press the TVF, Pitch, or appropriate function button. Patch Edit is essential for honing the sonic details of an individual Tone.

Now that you have a feel for navigating through the JV's edit procedures, let's dig in and see what we can do and how to do it. We'll also make some points as to why we might want to.

Effective Layering

A key to making the most of the JV's polyphony is understanding the role of each Tone within a Patch. Some Tones only sound at certain velocity levels, while others add subtle nuances that may be lost in the mix as you layer other sounds or instruments. These Tones are the primary candidates to be replaced by more sonically useful Tones, or muted entirely.

Within a Patch, each of the Tones uses one of the JV's 28 voices of polyphony. Our example, MIDIed Grand, uses three Tones; this allows you to play nine simultaneous notes - plenty if that's all you're asking the JV to do, but a bit restricting if you want to blend another sound, say strings, with your piano. If you were to layer MIDIed Grand with Preset B31 (B17 on the JV-80), "St Strings," which uses two Tones, you'd have a beautiful sound but only be able to play five notes before running out of voices. Unfortunately, this is how most users try to play their JVs - by layering multi-Tone patches on top of each other in Performance mode, wasting polyphony.

Since we know that Patches are already layers of Tones, let's see if we can't find a better way. In our MIDIed Grand patch, listen to each of the three Tones separately by muting and unmuting them with the Tone Switches. Now call up St Strings and do the same. Tone 1 has the left-channel strings, Tone 2 the right-channel strings. Call up MIDIed Grand again. Tone 3 has a low, round timbre that adds body to the piano sound at higher velocities. Since our strings will also add body, press Tone Switch 3 to mute it for now.

Now let's copy Tone 1 from St Strings into MIDIed Grand's unused Tone 2 location. Press write, cursor to Copy, and press enter. The display reads "From TEMP T1... to TEMP T1". The top line of the display is the copy source, so select Preset B31 (B17), then press Tone Select 2 so that the display reads "From B 31 T1... to TEMP T2". Press enter to execute the copy.

Our MIDIed Grand now has strings on the left side. Use the Edit Palette Level controls to balance the sound to your liking, then press Pan and use slider 2 to move the strings to the center (0). If you push the slider all the way to the top, you'll access the RND (random) setting, which adds fullness to chords by randomly panning each note in the chord to a different position in the stereo field. Press edit, then common, and rename the patch, say "String Grand," then write it to a User Patch location. You now have a sound that's nearly identical to what you'd get by layering the two original Patches in a Performance, but it has nearly twice the polyphony of the original layer.

Using the Edit Palette for Live Performance

Our new String Grand patch can also provide a good example of how to use the Edit Palette during a live performance in Patch mode. We've already determined that we can fade the strings in and out using slider 2 simply by pressing level. Pressing Tone Switches 2 and 3 will mute the strings and restore the full piano sound of the original MIDIed Grand - no additional programming necessary, and there's no need to switch to a new patch.
Another example of performing with the Edit Palette is provided by Preset Patch C31, "Touch Lead" (B77 in the JV-80). Call up this patch and notice that Tone 2 is enabled, but has 0 level. Increasing its level with the slider brings in a raspy bit of growl (caused by FXM - see page 4), adding a wealth of expressiveness to this sound. Or select Preset Patch D32, "JP-8 Pad" (B74), press Cutoff in the Edit Palette, and use sliders 3 and 4 to sweep the filters. Unused Tones within a Patch can also store an interval tuning to quickly transpose keys or octaves.
FYI: *In Roland's patch library for the JV, you'll find some Patch names ending in "x4". These are preprogrammed with three similar Tones muted for quick switching or layering.*

Controller Routing

Let's step back to our String Grand example. Using slider 2 to control string level is fine if we're playing in Patch mode, but what if the Patch is part of a Performance, or we're sequencing? Controlling Edit Palette Level or sending a MIDI volume message will affect the whole patch, not just the strings. Welcome to the wonderful world of controller routing. The JVs have three controllers, two pedals, and the C1 slider, all of which can be assigned to send continuous controllers or other MIDI messages. Each Patch has three control sources - modulation, aftertouch, and expression - which can each be routed to four simultaneous destinations per Tone.
As an example, call Preset Patch B64, "Harmon Mute1" (B43). Sustain a single note, then push the modulation lever forward. You'll hear a growl and a bit of vibrato. To see how this is accomplished, press edit and the Control function button, then cursor down until the Modulation Destination Depth screen appears. If its not already lit, press Tone Select 1 so that "1---" shows in the upper left, indicating that the Tone 1 values are displayed. The display tells us that modulation will increase the level (LEV +63) of Tone 1, and cause its pitch to be altered by LFO 1 (PL1 +2). Pressing Tone Select 2, "-2--", shows that modulation has no effect on Tone 2. If you want to tame the growl, lower the +63 to about +25.
Press Patch (Patch Play) and return to our String Grand patch. Let's assign the C1 slider to transmit expression and have it control the level of our strings. Press Control and cursor down until the C1 Assign display appears. Cursor right and set the mode to I+M (both internal control and MIDI out) and the Assign to CC11/Expression. The Value will be set in performance by the C1 slider position, so the parameter field on this screen is blank. Press Control to exit. Controller assignments are system parameters, and don't need to be written into memory - they will remain until you change them.
In our String Grand patch, with Edit Palette Level selected, bring slider 2 to 0 to temporarily silence the strings. Press edit and Control (Patch Edit and Control), then cursor down until the Expression Destination Depth display appears. Press Tone Select 2 to route the signal to the strings. Press inc until the first off changes to lev. Cursor right and give it a positive value, say +32. Now the C1 slider will control the string's level. Write this expression routing into memory as part of the Patch, and you can have this same control in Performance mode, or send a CC11 message from your sequencer to control the string's Tone individually within this Patch.
In addition to level, the modulation, aftertouch, and expression control inputs can be routed to your choice of 11 other parameters, such as pitch, cutoff, resonance, and LFO rates or depths, providing a wide range of expressive controls. Also note that you have negative, as well as positive, depths, so you can crossfade Tones, open and close filters, or slow an LFO while increasing its depth, all from a single controller.

Effective Panning

If you've tried sending panning messages to your JV, you may have been puzzled by some mixed results. The effect seems to work great sometimes, but so-so or not at all other times. For example, select Preset Patch D11, "Beauty Vox" (B34). Assign the C1 slider to CC10, or send pan control data from your sequencer. Moving the slider produces some panning, but not a clean left/right separation. To find out why, we once again need to dig into our Tones.
After exiting the Control page, press Pan in the Edit Palette. You'll see that the three active Tones are widely spread across the stereo field, with values of RND, 63R, and L64. This initial placement provides a lush-sounding patch, but prevents a full left to right pan, as the pan message can only move the Tones on the extremes back to center. Use sliders 1 to 3 to give all Tones a 0 Pan value. Now the C1 slider will provide a more prominent left or right movement. The Patch also has a master pan setting under edit and Common (Patch Edit and Common), but this is virtually always set to center, 0.

The JVs also have stereo effects processing, so the reverb and chorus will diffuse a hard left pan slightly back into the right channel and vice-versa. If you want to treat the JV's stereo outputs as two individual outs, you'll need to eliminate the effects sends for each Tone. From Pan in the Edit Palette, cursor up twice and zero out the Chorus Sends, then cursor up once more and do the same for Reverb. You now have true left and right separation. These changes can be saved into individual Patch memories.
One final note on panning: If after all this, you find a sound is not staying panned as you play it, check each Tone's Pan Key Follow. This parameter allows the specific notes you're playing to control the pan position of the Tone. For example, a piano sound may sound to the left on the low end and move to the right as you play up the keyboard. Press edit and TVA (Patch Edit and TVA). The first display has the P-KF parameter. A 0 value means keyboard position will not affect panning.

Special JV Features

To conclude our section on Patches and Tones, let's take a look at some applications of the JV's lesser known and/or unique abilities.

Tone Delay
While some of the factory patches use the reverb processor for delay, this creates a dilemma when sequencing, as the Performance only has one reverb processor, and you may not want delay on all eight Parts. Hmmm . . . how about using those four Tones and Tone Delay to build your own delay? Call Preset Patch A71, "Nylon Gtr 1" (B51) and copy Tone 1 to Tones 2 through 4. (Unless you want the echoes to bounce around at random in the stereo field, it might be a good idea to change the RND pan to 0 before doing the copy operation.)
Press Level in the Edit Palette and set Tone 2 to 40, Tone 3 to 22, and Tone 4 to 6. Cursor down to Tone Delay Time and set them to 0, 32, 64, and 96 for Tones 1-4 respectively. *Voilà*, instant delay! Adjust the Tone Delay Time to suit your song tempo, or each Tone's Pan position to have the delays fade across the stereo field. To save polyphony and prevent the delay from muddying up faster passages, press edit and TVA, and cursor down to Delay. Press all four Tone Selects simultaneously, "1***", and set the mode to Hold. Now the delay Tones will only sound if the note is sustained through the Tone Delay Time.

FXM
FXM stands for Frequency Cross Modulation, which sounds quite technical but is really quite simple. FXM uses a square wave to modulate the selected waveform, which creates new harmonics, essentially creating a new waveform. Waveform modulation was common on analog synths, but is not so common on instruments that make use of complex digital waveforms. We've already discussed two Patches that make use of FXM, Touch Lead and Harmon Mute1. Press edit, then the Wave/LFO function button, then cursor down to FXM. Simply turn it on and set its Depth. The results can vary by waveform, depth, and pitch, but FXM is great for adding growls to saxes, or some extra bite to synth sounds. I'll leave you to experiment.

Analog Feel
Many of the pad sounds on the JV employ an effect called Analog Feel. This produces irregular variations in pitch and level to emulate unstable analog oscillators. These subtle (or drastic, if you overdo it!) variations help to produce the trademark warmth of analog synths, as well as the natural pitch variation of percussion. This parameter can only be accessed in Patch Edit, but once stored into a Patch it is carried over to the Performance. Press edit and Effect and cursor down to Analog Feel. Again, I'll leave you to experiment on your own.

Release Velocity
In addition to being velocity- and aftertouch-sensitive, the JV keyboards also transmit release velocity. Depending on your playing style, this can take some getting used to, but it's another source of nuance that can make a difference, especially on acoustic instrument simulations - bows and fingers don't leave strings identically each time, nor does breath expire through a reed or valve with digital precision! Return to B31, "St Strings" (B17). Play and hold a chord, then lift your hands off the keyboard as slowly as possible. Play the chord again, lift your hands quickly, and listen for the difference in release time. If you have trouble hearing the difference, muting the reverb may help. To program release velocity sensing, press edit and TVA, then cursor down to TVA-ENV and adjust the Velo-T4 values. Negative values will make the release time shorter as you produce higher release velocities by letting the keys off more quickly. Release velocity can also control the release times of the pitch and filter envelopes.

Redamper
The JV-90 has this new feature that was not found in the previous JVs. Typically, a damper pedal allows you to sustain notes in place of physically holding the notes. Redamper allows you to sustain notes that are in the process of dying away if you press the pedal after you've removed your hands from the keyboard. Turn Redamper on under edit and Control, then cursor down to the Pedals display. Make sure your Tone(s) have sufficient release time (TVA ENV T4), so you can catch them as they fade. If the filter envelope also shuts off the tone, adjust TVF ENV T4 as well. Try the Redamper switch on our String Grand patch, and remember that this is a per-Tone parameter. It could be helpful when changing sounds in live performance, along with the JV's natural Patch Remain ability to continue sustaining notes from the previous Patch when a new Patch is selected. When using Redamper on a pad sound, you may have to adjust your pedal technique so as not to build up muddy cluster chords.

Performances

Time to shift our attention to the JV's Performance mode. Performances allow the JV to transmit and receive on up to eight MIDI channels, send multiple program and volume messages to control other sound sources, and set key ranges for both internal and external sounds. However, as with Patch mode, there are some intricacies to making the most of these features. Press Performance (Performance Play) and read on.

Performance Zones & Key Modes
First, it's important to understand that there are three components to each Performance: Tx Zones, Int Zones, and Parts. Tx Zones control what is transmitted out MIDI - which MIDI channels data is to be sent on, which volume, pan, or program changes are to be sent, and also the velocity sensitivity and curves to be used, along with the key ranges used to control external sound sources. Int Zones control the same parameters - channels, velocity controls, key ranges, etc. - for the internal sounds being played locally by the keyboard. Parts control the sounds being played via the MIDI in: patch selection, level, pan, tuning, and MIDI receive switches.
These three components interact differently depending upon the Performance's Key mode. Each Performance is assigned one of three Key modes - Layer, Zone, or Single. Layers and Zones are the main master controller modes, with Tx Zones, Int Zones, and Parts all available. They are very similar except that Layers ignore the Tx and Int Zone's key ranges; all sounds are layered across the entire keyboard. Singles are optimized for using the JV with a sequencer, and are quite different from Layers or Zones. In Single Key mode, both the Tx and Int Zones are disabled. Only the Part selected by the cursor in the display will be played, and the JV will change its MIDI transmit channel to the MIDI receive channel for that Part, making it quite simple to change channels to communicate with different instruments in your sequence.
For a quick example of these Zones and Key modes in action, pull up Preset Performance A01, "Jazz Split." Press edit and Common (Performance Edit and Common), then cursor down to see the Key mode, which is Zone. Now press the Int Zone button, and you'll see that Parts 1 and 2 are active, as shown by the lighted Part Switches under the display. The lighted switches indicate that you're playing two of the JV's Parts. Pressing Part Switch 3 will enable a third sound on the keyboard. Press Tx Zone and the same two Part Switches are lit, indicating that you're transmitting MIDI out on two channels as well. Press Part and all eight Part Switches light to show that all of the Parts are available to receive MIDI data. The JV-90 and JV-1000 have convenient Tx-Local-Rx switches near the Edit Palette, which allow you to quickly check the status of all three components. Pressing Tx shows the Tx Zones, both lighted shows the Int Zones, and Rx lit shows the Part receive switches.
Now that we've dissected a Performance, please note that the Edit Palette is still active in Performance mode, albeit with a new set of parameters for Performances. The Level button will control the level of the internal sound source only, but you can send MIDI volume messages on any of the active Tx Zones by pressing Tx Vol in the Edit Palette and moving a slider. In our Jazz Split example, slider 1 will send MIDI volume on channel 1, slider 2 will send on channel 2. Enabling all eight Tx Zones turns the Performance into an eight-channel MIDI mixer —handy for controlling external modules in live performance or recording volume messages into a sequencer.

Using Preset Performances
Programming a Performance from scratch can be a bit complicated, so I take advantage of the Preset Performances whenever possible. For example, I always start with A01 Jazz Split when I want to setup a split keyboard, because about 90% of the programming is already done for me. I simply need to choose the sounds and I'm done. My sequencing template is built around A08 Fusion Set, a Single Key mode Performance ready for

sequencing. If you're looking to construct your own Performance, check the Presets first to see if there's one that has the Performance attributes (i.e., key mode, key splits and velocity response) close to what you're looking for, and use it as a template.

Real-Time Patch Editing

One of the JV-90's and JV-1000's best kept secrets is their ability to edit a Patch from within a Performance. (Sorry, the JV-80/880 do not have this ability.) Call up Preset Performance A08 Fusion Set, and cursor to the bass patch on Part 2. Hold enter and press the Patch mode button. The display shows the Thumpin Bass and looks like it has returned you to Patch mode. The Performance is still active, however, you just can't see it! But you can hear it if you're playing a sequence, and you now have all the Patch Edit Palette and Patch Edit controls available so you can tweak your sounds in context as the music plays — lower a cutoff frequency here, add a little resonance there, reduce a release time as needed. The P(2) in the display indicates you're editing Part 2 of the Performance. Just press Performance to return to the normal Performance displays.

Chorus & Reverb Controls

The Performance Part's effect sends have been a source of confusion for a number of users. Back in our Fusion Set Performance, cursor left to play the MIDIed Grand patch on Part 1. Press Level in the Edit Palette and cursor down four times to the Reverb switches. Hmmm . . . just off and on? Turn it off. Hmmm . . . still hearing some reverb on the piano?! The reason for this lies in the Chorus's output. Press edit and Effects (Performance Edit and Effects) and we'll see that in this Performance, the Chorus is sent out through the reverb, Out=REV. So even though we disabled the Parts Reverb switch, this patch had tones routed to the chorus, as well, which were in turn sent through the reverb. Changing Out to MIX will kill the reverb entirely, and separate the Reverb and Chorus sends. By the way, you can use CC91 to control the Reverb Switch and CC93 to control the Chorus Switch via MIDI. Value 0 for Off and 127 for On.

Okay, so we can turn reverb off and on for the Part, but how do we control the depth of reverb somewhere in between? This is another example where we need to edit a Patch from within a Performance. On the JV-80/880, you must edit the Patch, then Write it into a User Patch location in order to hear your changes in a Performance. Since each Tone within the Patch has its own Reverb Send Level, we can't properly control reverb depth from a single value in the Part. Press Pan in the Patch Edit Palette and cursor up to Reverb Send Level. The sliders will control the reverb depth for each Tone. The Patch Reverb and Chorus Sends, Edit and Effect (Patch Edit and Effect) are disregarded in Performance mode.

Outro

I hope these ideas have helped you gain a better understanding of your instrument, and inspired some creative ideas of your own. Experience is the best teacher, so I encourage you to experience the magic of mastering your JV!

Appendix 1. Reading, 'Riting, & Roland

For many new owners of synthesizers, it may seem as if the instrument, the manual, and the salesperson are all speaking a foreign language. Well, I'm here to tell you— it's true! Like any art, science, sport, or hobby, electronic music has a jargon all it's own, and delving into the vernacular can be an intimidating process for the uninitiated. Hopefully, the glossary below will help you in your rite of passage into Roland's digital domain of JV synthesizers. If you're just getting started, and want to customize the factory sounds and program your own, or are just plain curious how these things work, select one of the JV's Preset Patches, a string sound or synth pad that sustains, and press the Tone Switches to mute all but one Tone so you can isolate a single sound. Press EDIT (Patch Edit) and start with the Wave/LFO parameters. Proceed from there through the TVA and TVF envelopes. Edit each parameter one at a time, listening for it's effect on the sound, and reading it's description in the — no, don't say it! — owner's manual. Manuals really do hold valuable information. Keep in mind that many parameters are interrelated, so adjusting one may have no discernable effect, depending on how others are set. Enjoy!

attack time: The first stage of an envelope. In the JV, attack is equivalent to T1 (Time 1) on all of the envelopes.

cutoff frequency: The point in the frequency spectrum at which the filter begins to reduce the harmonic content of the sound. When the filter is set to lowpass mode, frequencies above the cutoff frequency will be lower in volume. As the cutoff frequency is lowered, more of the highs are reduced or eliminated, making the sound darker.

envelope: A shape that is applied to each note. Usually a synthesizer's envelopes are programmed by time (or rate) and level parameters. A JV Tone has three envelopes, one for each pitch, filter, and amplitude.

filter: The function that controls the frequency content of a Tone. The filter makes the sound brighter or darker, and therefore has a powerful effect on the tone color.

LFO: Low-Frequency Oscillator. The LFO creates periodic movement, such as vibrato, during the course of a note. The JV has two LFO's per Tone. Each can be routed to control a specific destination — the pitch, filter cutoff, or amplitude.

Part: In the JV, the Part is a slot or partition within a Performance. Each of the eight Parts holds the number of a Patch, along with related parameter settings.

Patch: The basic sound that is heard when you play the keyboard; also, the group of parameter settings that defines the sound. Patches combine from one to four Tones.

Performance: The highest level of organization in the JV. Each performance is a group of eight Parts. Performances also control the JV's MIDI parameters.

release time: The final stage of an envelope, which is triggered when the key is released. In the JV, release time is equivalent to T4 (Time 4) on all of the envelopes.

resonance: A function within the filter that accentuates the overtones near the cutoff frequency.

Tone: The primary building block of a Patch. Each Tone contains it's own TVA, TVF, two LFO's, choice of waveform, and other parameters.

TVA: Time Variable Amplifier, Roland's digital amplifier (equivalent to a VCA in older gear). The TVA controls the volume of the sound over time.

TVF: Time Variable Filter, Roland's digital filter (see filter).