SONAR 2016

“Newburyport” Update

We like to provide a balance of features for new users and veterans, so after last month’s Patch Point/Aux Track improvements, optimizations, and Melodyne 4 update, it seemed like a good time to introduce something that would make SONAR easier to use for everyone. The result is the new Add Track Menu, which provides a simple, consolidated way to insert audio or MIDI tracks, and cuts down on the number of clicks needed to perform this basic functionality.

But that’s not all. More and more manufacturers are starting to see SONAR as a “platform,” not just a DAW, so we were intrigued when LANDR—a tech-savvy online mastering service—expressed interest in collaborating with Cakewalk. LANDR revolutionizes the mastering process with drag-and-drop simplicity, achieving results comparable to professional studio work in minutes.

LANDR offers instant access to users who are new to mastering, and even helps musicians achieve better mixes when using pro mastering engineers thanks to the Preview ability. And we have more on tap for this month, so…keep reading, and then go make some killer music. – Bill Jackson and the Cakewalk Team

Add Track Menu: We’re always looking for ways to simplify workflow, especially when it applies to something as basic as creating a new track. So we re-thought the track insertion process, and came up with a simpler, more efficient way to add both audio and instrument tracks.

LANDR Online Mastering Integration: Get ready for a new tool for your toolbox that allows mastering directly within SONAR, including the ability to do “test masters” you can preview for free, as well as check out different levels of “intensity” to hear how they affect your mix.

New Track Icons: New products appear, and when they do, we do our best to add more track icons so you don’t have to make them yourself (and it’s helpful THAT track icons now support images in PNG format). This release includes 27 track icons for the complete line of Neat microphones.
**Workflow Enhancements and Fixes:** Newburyport doesn’t have any particular bug fix theme this month, so it’s all about dealing with an eclectic collection of annoyances that are no longer annoying—like you no longer have to worry about crashes in projects with an unusually high number of automation lanes.

**Review | TC Electronic PolyTune Plug-In and Clip-On:** It’s never fun to have to redo an instrument track because it’s out of tune. Sure, you can probably use Melodyne to do a fix, but why not get it right at the source? TC’s solution for both the physical and virtual worlds is pretty ingenious.

**Anatomy of a SONAR Project—Virtual Harmonics:** Composer Jerry Gerber has quite the resumé, but he’s also a long-time SONAR user, and frequent contributor to the forums. Although this article focuses on the production of latest album, it also provides valuable insights on the music-making process.

**5 Rapture Pro Tips:** Why restrict yourself to playing presets (no matter how good they are) when you can add your own twists and end up with a distinct sonic signature? It’s all about programming, it’s all about functional depth—and it certainly doesn’t hurt to check out these five useful tips.

**BlogBeat:** A roundup of a few of the Cakewalk Blog’s “greatest hits.” This installment leads off with a story about Cakewalk user/astronaut Chris Hadfield, who recorded a cover version of David Bowie’s “Space Oddity”—in space. Really. Also get some great tips on using the Z3TA+ 2.
Add Track Menu
Artist, Professional, Platinum

When it comes to workflow, simple is good—so creating a new track should be simple, and consolidate all the functionality you need in a single, intuitive menu. The new Add Track Menu streamlines the process of adding both audio and instrument tracks. For an overview and more info, also check out the CakeTV video by Joey Adams.

Click on the Add Track button, then choose Audio or Instrument track.

AUDI0 TRACK MENU OPTIONS

The Basic options let you choose the track’s Input, and select Record Enable and Input Monitoring. You can also specify multiple tracks that will share these characteristics.

The Advanced options are Create Folder (encloses the tracks you’re creating in a Track Folder), and Output, which chooses the track’s output assignment. If you create multiple tracks, they will share this output assignment. The output options are the same as what’s available for any audio track.

If you check Create Bus, the Add Track function creates a new bus, and assigns the outputs of any tracks created by this Add Track operation to the new bus.
The Basic options are Instrument (choose one from the drop-down menu, or MIDI track only), Input (the same as a MIDI track’s input drop-down menu), Record Enable, and Open Virtual Controller. As with the Audio option, you can again specify the number of tracks; these will all include the same instrument. The default track type is a Simple Instrument track.

Like Audio tracks, the Advanced options include Create Folder to enclose the created tracks in a Track Folder, and Output, which chooses the track’s output assignment and are the same as for any audio track. However you can also choose to split the Simple Instrument track so you end up with a MIDI track and Audio track (a good reason to check Create Folder), and the audio outputs can be the Main Outputs, All Stereo outputs, or All Mono outputs.

Finally, please note the following:

- The output for Audio or Instrument tracks can be Aux Tracks and Patch Points, which adds to the flexibility.
- The Add Track settings persist. So for example if you open the Instrument Add Track dialog, choose Advanced mode, and check Open Virtual Controller, the next time you open the dialog it will be in Advanced mode, with Open Virtual Controller checked.
- The number of tracks resets to 1 upon closing the Add Track Menu.
LANDR Online Mastering Integration
Artist, Professional, Platinum

LANDR has become a very popular way to master recordings online, and generate low res MP3 (192 kbps), high res MP3 (320 kbps), standard 44.1/16-bit WAV, or HD files. SONAR is the first DAW to integrate this option via a simple, direct export so you can master files directly within SONAR. Even if you’re using a mastering engineer, you’ll find that LANDR offers new workflows that may not have even been possible before, such as...

- You have a live recording you want to put on your band’s website right after the gig. Feed the file into LANDR, and you’ll be able to offer your fans a higher level of quality within minutes.
- You’re an engineer or producer, and your client wants rough mixes as the song progresses. Use LANDR to give those rough mixes a sound that’s more like what they’ll hear when the project is done.
- You do podcasts, and want the sound to be as polished as possible. Only problem is, you’re not going to get it mastered in your hotel room at 2 AM so you can have it online the next morning. But as long as you have an internet connection, LANDR can process it for you.
- You can fine-tune your mixes by previewing your masters in LANDR. If there’s something you don’t like, you can go back to SONAR, remix it, and use Preview to receive instant feedback. This can be a huge time saver, especially if you’re working with a mastering engineer and want to avoid the back-and-forth of fixing issues in your mix.
- You can master audio that you normally wouldn’t think of mastering—like drum loops, beats, samples, recordings of school recitals, and the like.
- You’re just getting into recording, and you’ve heard people say your music would sound a lot better if it was mastered properly. Here’s your chance to find out what they’re talking about, and why mastering is a crucial final step in the recording process.
- You preview a bunch of your tracks, and there’s one in particular where the sound is exactly what you want. This can help set the standard for your other songs, either by changing their mixes to be more like the one that translated well to a master, or by helping a mastering engineer understand the kind of sound you seek without having to waste time on trial-and-error.
• You’ve sent off some music to other online mastering services and weren’t all that happy with the results. With LANDR’s free previews, you’ll know exactly what the process will do before you commit to creating your masters.

One of the LANDR’s great features is that because you can hear free previews of what your music will sound like, you’ll have no doubt about whether you want to use LANDR for mastering or not. After extensive testing around the Cakewalk offices, the consensus was that the end results LANDR produces are impressive, whether for final mastered tracks or simply for proofing.

HOW IT WORKS

Export the audio you want to master by choosing File > Export > Audio. Then, under “Files of Type,” select LANDR Master. Export to any location where you normally save exported audio files. If you don’t have an account, at this point you can sign up for a free LANDR account. If you already have an account and are logged in (otherwise you’ll be prompted to log it), LANDR will upload and analyze the file, then create a free preview and open a window for previewing and evaluation (you have a choice of a larger, or more compact, window).

Now you can play back and compare the original and mastered version, and evaluate three different “intensities”—Low, Medium, and High. Low is the subtlest, and is probably where you should start, as LANDR will look for and fix obvious problems, like a “tubby” lower midrange or lack of highs. However there is no limitation to how many times you can listen to the various versions prior to making a final decision on which one you want to use.

Medium is typical pop mastering, and High makes masters that really jump out. Paradoxically, you might find High best for music beds that need to be well in the background for something like a commercial, because of the sonic consistency. You can compare the original to the mastered version, or just listen to the mastered version. Note that your account offers you an unlimited number of previews, so you can make tweaks to the mix to accommodate changes made by mastering without incurring any charges.
If you decide you like what you hear, you can then have LANDR create a master. At this point your options depend on which plan you signed up for; this is all described on LANDR’s web site, but the short form is you can sign up for free and be entitled to two low-res MP3s per month as well as unlimited previews. If you want to take things further, you can pay by the month or by the year, as well as exceed your plan options and pay for individual tracks. For example you might sign up for the least expensive option because all you really need is 192 kbps MP3s, but then decide that one of them is so good you want an uncompressed WAV version of it.

THE TECHNOLOGY BEHIND LANDR

Certain musical styles have definite “sonic signatures” (here’s an article that demonstrates how different musical styles exhibit typical curves). A lot of people who start off in mastering do so by comparing the file they’re working on to a superbly-mastered recording, and trying to get as close as possible. Over time, they learn how to adjust various parameters for different types of music to produce quality results. Every mastering engineer, consciously or unconsciously, has a “database” from years of experience that’s applied to projects. Reduced to basics, that’s what LANDR does—except there’s a lot of technology behind it.

LANDR assembled a team of sound engineers, signal processing specialists, record label owners, musicians and even an astrophysicist, to define algorithms based on testing with actual humans. Their goal was not just to provide “cookie-cutter” mastering, but create an adaptive engine that “listens” and reacts to music, based on feedback provided by music listeners,
engineers, and LANDR clients. This feedback tunes the audio engine further; the more people use LANDR, the more that adds to its “knowledge base” of how music should sound. Interestingly, you’ll even find that sometimes when previewing, LANDR makes no significant changes at all—it doesn’t create changes just for the sake of creating changes. It follows a “first, do no harm” philosophy.

PREP WORK

LANDR doesn’t mix your song, so you need to provide the best mix possible. Don’t apply compression or excessive EQ in your master bus, as LANDR isn’t about “undoing” mistakes but enhancing the existing source material. Make sure there’s no clipping, and leave a little headroom. Do a “reality check” on your mix by listening over different speakers and headphones, as well as in different listening environments. LANDR is very clever, but no algorithm—no matter how refined—has yet figure out how to get around “garbage in, garbage out.”

Remember, the goal of mixing is to obtain the best possible balance among all the tracks to create a cohesive musical statement—not create the loudest two-track mix on the planet. If that’s what you want, set LANDR to the high intensity setting and let it do the work.

Ultimately, LANDR is about simplicity. It doesn’t give you hundreds of parameters to adjust, but three options. The uploading and previewing process is simple, intuitive, and free, and integrating it with SONAR makes the procedure just that much easier.
New Track Icons
Artist, Professional, Platinum

New Track Icons may not be as exciting a feature as Patch Points or cool optimizations, but improved versions were introduced with SONAR 2015, and we keep adding new ones to keep up with new products. With Neat Microphones starting to get traction and great reviews (check out the review in *Sound on Sound*, Volume 31, Issue 4 and *Recording* magazine’s February 2016 issue), SONAR now includes the complete collection of Neat mics, including both the Bee line and Widgets line.
Fixes and Workflow Enhancements

Artist, Professional, Platinum

Fixed issues where:

- Editing clips could reset the Data Filter to Automation
- On first launch the Drum Pane would be the PRV default
- Selecting *Fit Content* in the Track Pane didn’t accurately center events vertically in MIDI clips
- Previewing multi-channel WAV files in the Browser could cause a hang
- Crashing could occur in projects with high automation lane counts
- PRV grid and timeline could get out of sync
- A check mark was needed next to the current MIDI input in input menus
- The “Give all Keystrokes to Plug-in” function was not working correctly with some plug-ins (MeldaProduction)
- Clean Audio Folders could hang when scanning multiple drives
- Reassigning audio clips in the Track View was not “dirtying” the document
- There were duplicate entries for Aim Assist in Key Bindings
Review: TC Electronic PolyTune Plug-In and Clip-On

By Craig Anderton

Yes, I know how to tune a guitar—although I don’t know how to tune all six strings simultaneously, which is why I’ve become addicted to Gibson’s automatic tuning systems. But not all my guitars have automatic tuning, so I wanted a simple, small clip-on tuner. There are plenty of those on the market, but what tipped me toward the PolyTune was the included free download code for a plug-in version that supports VST 2.4, VST3, Audio Units, and AAX, as well as sample rates of 44.1, 48, and 96 kHz.

WHY POLY?

The main PolyTune feature for all the various models TC makes is a display that shows the tuning of all six strings simultaneously so you know which ones are in tune and which ones aren’t, and whether the guitar (or bass) is at concert pitch. For example, here you can see the G is quite sharp, and the high and low E strings are both a little bit flat.

At this point, you can strum the strings and tune them, or pluck the individual strings that are out of tune, in which case PolyTune changes automatically to chromatic mode for that that string. You can then tune as you would with a conventional tuner. In the screen shot, I’ve tuned the G note a little flat so I can tune it back up to the proper pitch (your tuning “holds” better if you tune up to pitch than down to pitch).
ADDITIONAL FEATURES

You can mute the tuner so the audio doesn’t pass through, but the more interesting features appear when you click the Settings button to the display’s upper right: choose Guitar or Bass, Drop Tunings, different Reference Frequencies from 435 to 445 Hz, and an alternate color scheme. You can also choose between a traditional needle display or a strobe tuning display for the chromatic mode.

ABOUT THAT CLIP-ON VERSION...

For those of you who live in the physical world as well as the virtual one, the clip-on PolyTune is impressive in its own right. It has the same features as the plug-in (other than the alternate color scheme), but adds more alternate tunings, a capo mode for checking tuning when using a capo at the first to seventh fret, and has the ability to rotate the display orientation (yes, left-handed guitarists—you’re covered too).

With either the clip-on or plug-in version, TC claims accuracy of ±0.5 cents in chromatic mode and ±0.02 cents in strobe mode. The tuning range extends beyond standard bass and guitar tunings, from A0 (27.5 Hz) to C8 (4,186) Hz. The clip-on is small but easily readable, and the clip has a rubberized surface to prevent scratching (but nonetheless, you want to remove it when not in use). The tuner comes with a CR2032 battery and TC specs a battery life of around 18 hours, which is a lot of tuning.

There are few limitations. The main one for the plug-in is that you can have only one instance in a project. I get around this by putting it in the master bus, hitting E to take out any effects in SONAR, and then soloing the track with the instrument that needs tuning. Also, the strobe
version doesn’t work with bass, but this is also a kind of “feature” because if you play guitar but have no interest in the polyphonic strum mode, you can set the tuner to bass mode yet still tune guitar chromatically. Finally note that in general, polyphonic tuning is a bit more finicky than chromatic tuning, but for quick touch-ups, it does the job with all the instruments I tried.

CONCLUSIONS

With a street price around $40, there are definitely less expensive alternatives on the market. However, while a $10 tuner is better than nothing, you definitely won’t get a polyphonic plug-in version as part of the deal. Furthermore, I’ve tested a lot of tuners—both hardware and software—while evaluating Gibson’s automatic tuning, and was somewhat taken aback by how much they vary. Although I can’t verify TC’s accuracy claims, tuning a 2015 Les Paul Traditional to a Peterson strobe tuner (still the gold standard for tuning) showed the guitar as perfectly tuned according to the PolyTune. PolyTune also confirmed the accuracy of the same guitar tuned using Gibson’s automatic tuning system.

So, my search for a clip-on tuner—and plug-in—has ended. And while it may not be as convenient as automatic tuning, the polyphonic mode brings it as close to that ideal as is possible with manual tuning.
Anatomy of a SONAR Project: Virtual Harmonics

Composition and production with virtual orchestras are about much more than just playing notes—and the musical philosophies in this article apply to all forms of music.

By Jerry Gerber

“My freedom will be so much the greater and more meaningful the more narrowly I limit my field of action and the more I surround myself with obstacles. Whatever diminishes constraint diminishes strength. The more constraints one imposes, the more one frees one's self of the chains that shackle the spirit.” —Igor Stravinsky, Poetics of Music

A paradox of the medium in which I work is that though I receive sincere praise about the “realism” of my virtual orchestrations, my intent has never been to fool listeners into believing they’re hearing a recording of a live ensemble. Instead, my aim is to create music and recordings that are expressive, satisfying, and artistically effective as compositions and sound, using the medium of computer-based instruments. My art is a studio art, not a performance art in the traditional sense. Bringing MIDI performance values up to a high level of artistic expression requires that the composer understand composition and MIDI programming, and this understanding results from a long and deep commitment to the medium. As always the real work is in the details. The digital orchestra, like any artistic medium, has its strengths and weaknesses, its potential and its limits. I try to be cognizant of both as I work with new music possibilities.

My new CD Virtual Harmonics, a product of about two and a half years’ work, contains a new symphony for virtual instruments and four short pieces. One of the most joyous aspects of composing for its own sake, rather than as an adjunct to film, TV or games, is that the music itself determines the work’s content and form. This is both liberating and challenging; the piece expresses nothing but itself and the musical values and imagination of the composer.

Symphony #9 for the Virtual Orchestra is a four-movement, 34-minute work for virtual instruments, including orchestral samples from the Vienna Symphonic Library Orchestral Cube, software synthesizers including Tera, Massive FM8 and Z3TA, and choir samples from Requiem.
Pro. Each movement is designed around a few themes, sub-themes and motives, and the development proceeds from the economical use of these materials.

The 1st movement begins with double chromatic mediant harmonies in the divisi violins and divisi violas, setting the momentum and tension. Other primary material includes the horns at measure 3, the cellos at measures 10-11 and also at measures 32-33. There are also counter-motives in most of my symphonic movements. In this movement there are only orchestral samples, no vocals or synths.

At least in my experience, structure evolves from content. The ideas themselves—where they want to go and how they get there—suggest and sometimes determine a piece’s form. I don’t start off with a pre-existing idea regarding overall structure, at least not consciously; I usually have an approximate length in mind, but even this depends on the ideas themselves, which are guided by subjective taste and aesthetic sensitivity. Freedom of imagination is the artist’s closest ally.

The second movement uses three instances of Z3TA+2, Cakewalk’s ingenious software synthesizer. I often play off arpeggiated rhythms and LFO-modulated timbres in my orchestrations; these dynamic harmonics can give clues as to how the orchestration, rhythm, and harmonies should proceed. The integration of orchestral samples and software synthesis is a natural starting point of exploration in this medium. Where virtual orchestration and traditional orchestration meet is often in specific ideas about the organization of timbre. Here are a few principles of orchestral writing to keep in mind.
Transparency: This implies that each musical part can be heard and has its own sonic space in which it can be heard. The ear rejoices in hearing chords sound together, but also in hearing each line as a thread in the tapestry of the musical texture. One meaning of transparency involves hearing a complex and dense passage with thick chords, while the linear polyphony is audible and the ear can follow a given instrument. This often requires eliminating all unnecessary notes and materials. As Brahms said, “It is not hard to compose, but it is wonderfully hard to let the superfluous notes fall under the table.” Often, what we omit from the composition defines its expressive power. The composer who doesn’t know the value of silence will not come to know the power in the notes. Transparency allows the music to breath, to allow space and silence to infuse their expressive qualities into the work.

Orchestral Weight: This represents how many instruments are being assigned to a specific musical part. Other than true polyphonic texture, musical parts are often in a hierarchy of melodic and rhythmic importance. There are numerous hierarchies in music; intervallic, dynamic, rhythmic and temporal processes are in a constant state of change. In orchestral writing, the idea of the long-line is crucial because it is through a single melodic thread that the structures and ultimate shape of the piece unfolds. The ability to sustain the long-line is part of every good symphonist’s technique, whether writing for acoustic instruments or computer-based instruments. As Copland pointed out, it is one thing to write a successful 3- or 4-minute piece, another thing entirely to craft a much longer work that achieves unity, variety, cohesiveness, and both surprise and inevitability. The depth of thought and feeling a composer brings to a piece directly influences how techniques will be used, and while technique itself can be learned and practiced, desire, imagination and the will to write music is something a composer finds only within his own psychological, intellectual and emotional resources.
Orchestral Balance: Balancing the ensemble means that loud passages are not too loud, soft passages are not too soft, the transitions between them create the desired effect, and the composer is considering the four basic frequency ranges: Bass (20-200 Hz), low midrange (200-1000 Hz), high midrange (1000-5000 Hz), and high range (5000-20,000 Hz).

The ability to hear the subtle interaction of harmonics, the inner voices of a contrapuntal or homophonic texture, and the difference between very slight increases and decreases of volume (1 dB and less), is a necessary skill. Mastering engineer Bob Katz says that mixing at around 83 dB is a very good idea because mixing at too loud a level overemphasizes the lowest and highest notes, while mixing at too soft a volume risks the temptation to bring up the bass and high notes too much, which throws the mix out of balance. There’s a huge subjective component at work, because musical style often sets the bar as to how a mix should proceed.

Another example of balance is about ensuring that the orchestration isn’t cluttered with instruments that don’t add to the desired tonal color of the mix, or the music’s overall sonic impression. We must always consider the principles learned in the study of harmony, counterpoint and orchestration in context—every musical situation is different. Even in the same piece, the musical experience must exist within the flow of time. Theory may be a starting point in composition, but sooner or later intuition, imagination and the need to experiment drives the ultimate shape of the work.

In the symphony’s 3rd movement, I programmed choir samples from the Requiem Pro library. Sometimes the voices are in front singing the primary line; other times, they blend into the orchestral texture. Achieving syllabic variation occurs via a MIDI controller, and adjusting volumes with controllers 7 or 11. Writing an adagio is challenging because a slow piece should not feel like it’s moving about aimlessly and slowly, but should have direction and momentum, even if very subtle. By examining the tempo map to this movement you’ll see there are many tempo changes, which enhance the musical flow and maintain the sense of direction.
The 4th movement makes use of various software synthesizers, more than the other movements. It makes use of pedal points and counterpoint and is based on only a few melodic ideas and motives. The violins at the opening measures (m1-m25) might be considered the main theme and there are sub-themes that occur throughout the piece. I also use a variety of percussion in this movement, including snare, tambourine, cymbals, gong, harp and a complete drum kit from EZ Drummer’s software.

I can’t stress enough the importance of MIDI controllers. Phrase-shaping is critical to crafting a musical line with variations in dynamics, velocity, note length, location relative to the beat, attack and release time, and sample-switching. As illustrated in the event list in my compositions, a lot of programming goes into effective phrase-shaping; it’s not just a matter of choosing the right articulation, because that’s only the first step. Depending on the dynamics, tempo, and orchestral factors, sometimes deep programming is necessary to create a line that has fluidity, expression, naturalness and a sense of intention that comes with attention to detail. This is why composing and producing in this medium can take lots of time—the composer isn’t just writing the music, but also interpreting the music through programming and mixing.

I assign controller 18 to attack time and controller 19 to release time, as these are the two ADSR envelope components I use the most. Creating a smooth legato line, particularly in the strings, often requires attack and release adjustments in addition to choosing the best sample-set for the passage. Velocity is another component of phrase-shaping. The emphasis on strong and weak beats is necessary to overcome the sense of mechanicalness which always degrades musical expression, which is the opposite of intention. The precision by which the computer can perform music is only a liability when the musician doesn’t understand phrasing. We can introduce “conscious randomness” through various means, including variation in tempo, with strong and weak beats, by displacing notes slightly before or after the beat, and, with VSL’s software player, attack pitch.

Sometimes I’ll use a sample-set built on three trumpets; in other words the sample-set is a recording of three trumpet players. A unison line employing such samples will sound fuller than a recording of just one trumpet player. Other times I’ll write for three independent trumpets (let’s say they’re playing the same line in unison) and offset them both in time, by several milliseconds, and by pitch, detuning them by 5 or 10 cents or so. This creates a chorus effect that adds depth, complexity and variation to the sound. A sample-set can consist of thousands of samples—every note is sampled in numerous playing styles and numerous dynamic levels.

When I use reverb, I use one reverb for the entire piece. A mastering engineer once suggested that I use one reverb for the winds, one for the brass, one for the percussion and one for the strings. I tried this for a while, but didn’t like the sound because I heard it as weakening the cohesiveness of the space. Using one high-quality reverb (I use the Yamaha SPX-2000) allows for greater connection among the sections, and then I can apply a specific amount of reverb to each section. With instrumental music, I generally record the final wave file in stereo with reverb.
After I’m satisfied that the composition is finished, I then check the MIDI sequence for errors. I export the file into Sibelius and create the score, even though live players are not involved, because the score helps me find mistakes, miscalculations and other issues that I may have overlooked while composing; allows discussing my work with students; and if I publish the piece for players I can add the necessary breathing, phrasing, bowing, dynamic and articulation marks so the piece can be played by musicians.

Another important creative purpose of a musical score is that it brings a second sense, the visual, to the process of composition. Though it’s obvious that the way music sounds is far more important than the way it looks on the page, notation allows the composer to consider the orchestration, harmonies, counterpoint, structure and textures of the piece in high-level detail. However, I don’t put details in the written score that instruct players how to play a given passage. Because this information is programmed abundantly in the MIDI sequence, and since there are no players, there’s no real reason to include these markings. The great power of notated rhythms are their potential for intricacy, precision and detail, the downside being only if they’re interpreted and performed without gesture, expression and intention. Notation allows for greater control of complexity and contrapuntal processes—something that overdubbing tracks doesn’t achieve to the same degree.

After finishing the score, the next step is rendering the MIDI performance into a wave file. I generally create a stereo wave file; stems are unnecessary at this point if the MIDI sequence was programmed with sufficient care. If I’m working with singers or instrumentalists, I make stems as well. The final wave file uses volume envelopes, which I think of as the macro-level of dynamics. Here the composer takes off the “composition” hat and puts on the “conductor” hat (or mastering hat if you prefer), and works with the overall volume of a piece’s various sections. Rather than use compression, volume envelopes on the stereo wave file accomplish a similar goal and with a high degree of precision. I use Ozone 5 for mastering, and often apply EQ, stereo imaging and a small amount of harmonic exciter to the music. I take my time and give myself a few days or even a few weeks or months to get used to the mix. If I’m not satisfied I redo the signal processing until I feel I’ve achieved the best results possible. I don’t consider the project complete until I burn the final master and send it off to the duplicator.

Jerry Gerber has written orchestral and chamber music, songs, piano music, vocal music and music for electronic instruments. He received his Bachelor of Music in composition and classical music theory from San Francisco State University in 1982 and has composed for film, television, computer games, concerts, dance and interactive media. Virtual Harmonics is available from jerry@jerrygerber.com for $16.76 via PayPal, which includes a weblink to the symphony’s score. You can also preview two tracks from the CD, as well as see their scores.

This article was republished and adapted with the express written consent of SoundBytes magazine.
Rapture Pro is the kind of instrument where the more you dive into it, the more you find. Since the recent improvements to the instrument itself and the sounds, it has become more and more of my “go-to” instrument when I want to create my own unique sounds. A lot of this is because I’ve really come to appreciate what the Instruments page can do—having eight “macros” can totally alter a program to the point where that single program can serve in many different contexts. So, here are some of the tricks I’ve learned along the way that take advantage of assigning Modulation Matrix parameters to Instrument page controls.

MONO-TO-STEREO WIDTH CONTROL

Rapture lends itself to panning elements to the left and right for big stereo effects, but sometimes you don’t want big stereo effects—you want more of a focused mono sound, or something in between. Fortunately, that’s easy to do.

To have an Instrument control change the signal from mono to stereo as you turn it clockwise, set the Modulation Matrix and element Pan parameters as shown. To instead change the signal from stereo to mono when turned clockwise, use the same assignments but set the Modulation Matrix Pan 1 value to 100 and the Pan 2 value to -100.

PSEUDO HARD SYNC

Rapture Pro doesn’t do hard sync per se, but you can come really, really close with this technique. Choose an FX Routing algorithm where a filter precedes a stage of DSP, which is set to Tube distortion. Assign an Instrument knob to Filter Cutoff; sweeping it will...
sound very much like hard sync. You probably don’t want to sweep it over the full range, so start with the settings in the screen shot, which work very well for this application.

**DISTORTION WITH CONSISTENT LEVEL**

When you crank up the DSP, sometimes the output gets pretty loud. For a consistent level as you turn an Instrument control, tie the same Macro control to two parameters—DSP Level, and the Volume level for the associated element. Setting a small negative volume change, like -5.0 or so, will offset the volume increase as you turn up the DSP.

**ADDING A TONE CONTROL**

This is a technique I used with the Gibson Bass Collection expansion pack (hey, every bass needs an amp with a tone stack, right?), but found it so useful I’m now including it in lots of programs. Sure, you can always follow Rapture Pro with EQ, but sometimes it’s really convenient to have the tone you want built in to the program.

Set EQ Band 1 for Lo, Freq to around 300, Q to 1.0, and Gain to -12.0. For Band 3, choose 1600, 1.0, and -12.0 for the same parameters. Of course, you can always tweak the frequencies for a particular instrument or sound. At the Modulation Matrix, Macro Knob 1 is the “Bass” control, and Macro Knob 2 is the “Treble” control. By setting their amounts to 24, rotating the knob starts off with the response at -12 dB when counterclockwise, flat in the middle, and +12 dB when clockwise. If you choose “Gain All” for the EQs, you can vary the tone of all elements at once if you set up their EQ stages as described.
DOUBLING UP

When you need more range than something can provide, you can double up parameters. For example, suppose you want tone controls that range over ±24 dB instead of the ±12 dB described above. No problem. Set the Gain parameters for the two EQs to -24, and double up the Macro Knobs for 1 and 2. The two knobs working together now have a range of 48, so the counterclockwise response is -24 dB, the mid response is flat, and the clockwise response is +24 dB.
BlogBeat

The Cakewalk blog is loaded with useful and interesting information, so don’t miss out! Here are some of the blog’s “greatest hits.”

Cakewalk User Records a Cover of David Bowie’s “Space Oddity”—In Space: Yes, this actually happened! Commander Chris Hadfield of the International Space Station, along with a laptop computer and acoustic guitar, give a moving performance of *Space Oddity*...in outer space. Chris also discusses playing guitar in space, and how it’s much different compared to playing on earth.

5 Ways To Widen Your Mix: Ever crafted an excellent mix, only to find that the mix doesn’t sound quite as wide as the reference? Yet the tracks are panned as wide as they can go? In the latest addition to the Cakewalk Blog, Joey Adams walks you through five different techniques that can help you expand the apparent width of your stereo field.

Mixing Heavy Metal with the ProChannel & Softube Mix Bundle: Walk through the entire mixing process of a heavy metal song with Dan Gonzalez. In this article he explains his processing choices for every track, and provides images and examples for every step along the way. Best of all, you can even download the same tracks and try mixing the song on your own. Is that cool, or what?

Basics | Five Questions About Filter Response: Filters are the primary elements in equalizers, the most common signal processors used in recording and mixing. This entry from Craig Anderton will leave you with a much deeper understanding of not only how EQ affects a signal, but also how the dial settings interact with one another to create unique response curves.

Virtual Instruments—5 Tips for the Z3TA+ Junkie: The Z3TA+ is extremely versatile, and you can make it even more so with just a few simple techniques. From EDM, to customizing arpeggios, to bass synth and even some videos, Dan Gonzalez shows you how to get more from a synth that has truly attained “classic” status.
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