

# Transoniq

# Hacker

The Independent News  
Magazine for Ensoniq Users

## Ten Tips for Better Rhythm Tracks

Steve Vincent



I love that advertisement where the musician says, "I've got a major gig coming up: give me the cheapest guitar you've got." Of course, it's ludicrous; no one would ever do that. But I've often heard the sequencing version of that scenario: sequenced music that is filled with lush, gorgeous sounds, wonderfully executed keyboard parts, a bass that you'd swear was real, and even a decent guitar emulation, but ruining it is a drum track that screams this is a sequence, and the person who did it does not play drums.

We don't need another lecture on how sequencing yields robotic, lifeless, mechanical-sounding tunes. We all know it can, but it doesn't have to be that way — and the key to the solution is in your drum tracks. Here are ten ideas which will humanize the percussion side of your sequences.

### 1. Tweak, tweak, tweak your drum samples!

Real drums are very dynamic! This can be difficult for non-drummers to appreciate. It's easy to think of a drummer as someone who just triggers loud noises (and now that I think of it, that describes perfectly some of the drummers I've worked with!), but a

percussionist with some finesse can coax amazing subtleties out of those skins.

So how do you coax sensitive nuances out of a static sample? By programming some dynamics into the sounds. The harder you hit a drum, the louder it sounds (duh), the higher its pitch (not so duh), and the brighter — or duller, depending on the drum — its tone (huh?). So, program your sound so that higher velocities raise the pitch slightly, increase the volume, and open (or close) the filter subtly.

Dynamics are especially important for cymbals and hi-hats. Along with the above velocity modulations, add some very subtle random modulation of pitch to cymbals, especially ride cymbals. The key here is subtlety — you don't want the modulation to be too noticeable. Experiment until your samples really begin to sound alive!

### 2. Creative key mapping

It's crazy-making enough to play drums on a piano keyboard; make it work for you at least part of the time! Instead of trying to do quick hi-hat parts or drum rolls by jabbing your two index fingers at the same key, map certain sounds (at least your hi-hat, snare and ride cymbal) so that identical samples are triggered by adjacent keys. This will increase the self-esteem of your index fingers, as each finger will have its own space. More importantly, it should smooth out the faster passages, and eliminate the accidental triggering of the burp sample you insist on having in your kit.

Let's talk cymbals. Look at a typical (real)

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drummer's kit: lots of cymbals! Sampled cymbals take up lots of memory, because their higher frequencies beg for a higher sampling rate, and it is notoriously difficult to loop the decaying sound. So, you may be tempted to scrimp on your cymbals to save memory. Bad idea. May your cymbals be fruitful and multiply! Using a different ride cymbal for the chorus or blasting through an array of crash cymbals can add new life to your sequence. And they don't all have to be fresh samples, either. On Ensoniq samplers, for example, you can copy the "Parameters Only" of a wavsample, then make different versions of your cymbals, varying pitch, filter, etc. I have at least ten different cymbal sounds on most of my drum kits.

The hi-hat bears special mention. This is perhaps the most expressive part of a drum kit, yet most people settle for just open or closed. Go the extra mile with your hi-hat, and find some partially opened, rattling, and pedaled variations. Taking the time to sequence in some variations on the hi-hat will make your friends ask who the drummer was on your project.

### 3. Drumroll dynamics

Want to make me hurl? Force me to listen to the dreaded "machine gun" drum roll which emanates from many a drum machine or sequencer. Believe it or not, with a lot of elbow grease, button-pushing and patience, it *is* possible to sequence realistic drumrolls. First, follow tips 1 and 2 above to get your samples in dynamic shape. Next...

Slow your sequencer *way* down, perhaps even as slow as 25, and poke those keys just as fast as you can. Don't worry about dynamics at this point. Having identical samples mapped to adjacent keys makes it easier to trigger the notes. The trick here is to pack as many drum hits per beat as possible into your roll. Now when you play your sequence back at its normal tempo, you'll have a much smoother roll than you would have if you'd recorded the roll in real time.

Now comes the real work: smoothing out the dynamics of the roll with lots o' editing. On a snare roll, the first couple of hits are typically louder as each stick contacts the head, then *they become quite soft during the roll*. This is the key to eliminating the machine gun: very soft velocities during the roll! Also, a human drummer does not play a drum roll in a static way (unless he's Carl Palmer), but with some dynamics, using crescendo and decrescendo, and often ending the roll with a louder hit or two, or a flam. This takes a great deal of button poking on the EVENT EDIT page to sculpt the velocity of each individual drumstroke, but it's definitely worth the effort; it makes your rhythm tracks come alive!

On a recent sequence, I had a snare roll which lasted about one second, but contained about fifty individual "notes." The first two notes had velocities of 69 and 45, then dropped to the low 20s. To make it more realistic, I swelled the velocities up and down (up to about 25, down to about 15) so that the roll would crescendo in sync with a pedaled hi-hat which was keeping the beat. I ended the roll with a triplet, shooting the velocities all the way up to 127. Of course, this is where graphic velocity editing on a computer sequencer would be wonderful. But, hey, ten years from now I'll be able to tell the story about the time that I used EVENT EDIT on

my EPS to edit the velocity of every single note of a two-measure snare roll!

### 4. Fills

On fills, the key is not to quantize. Again, slow your sequencer way down to record the fill, and try to put some dynamics into it. Once you get it right, then go in and edit the velocities of the individual notes until it sounds natural. I have come to view sequencing as very similar to multitrack recording: Don't use quantizing as a substitute for grunting out take after take, just keep punching in until it's right. Which leads us to...

### 5. Stop quantizing!

I am amused by the growing number of quantizing options available on software sequencers: groove, swing, humanize... I don't get it: You sequence your drum track, then you quantize it, but then it's too quantized, so you engage another algorithm to "humanize" it! Why not humanize it to begin with? True, sometimes it is very difficult to get the kick drum and snare to yield a rock-steady beat, and nearly impossible to give a pleasant, laid-back, rhythmic feel to a fast 16th-note hi-hat part. My solution is "The Poor Man's Humanizing Algorithm" — once again slow the sequencer down during recording; this will enable you to enter the drum parts near dead-on, but will also retain a human edge. It really makes a difference on those hi-hat and shaker parts.

### 6. Only in your dreams...

A common mistake, especially with novices, is programming "impossible" drum parts. For example, continuing a sixteenth-note hi-hat pattern while pummeling out a two-bar fill on the toms would obviously take more than two arms, or some very tricky footwork. There are exceptions, of course: Rick Allen of Def Leopard actually plays "impossible" drum parts live, and he only has one arm! Of course, he is aided by an array of foot-pedal triggers. Also, I've noticed that the drum tracks on a number of Toto songs continue an "impossible" hi-hat pattern during fills. So, surreal drum parts are not the worst of percussive sins, but if you want your tracks to sound real, avoid continuing hi-hat or ride cymbal patterns during fills. Also, fight the temptation to overuse Latin percussion; it can be a dead giveaway that you're using programmed drums.

### 7. Use drum triggers

Using drum pad triggers can make your drum tracks more realistic, because it moves you away from the pattern mode, which breaks up the continuity of your creative streak, and lets you play in a more linear fashion. Besides, it's more fun to hit pads with sticks. MIDI drum pads like the DrumKAT and Roland's Octapad are generally more sensitive than drum triggers, which require an interface to convert the signal into MIDI data. Even Yamaha's toy-like DD-5 with its four coaster-sized pads has fifteen velocity levels and a MIDI output, and you could probably pick one up for five bucks at the swap meet. Using drum pads as an alternate controller is similar to experimenting with different pitch tables on the keyboard: both open up new vistas of creativity.

(Continued on page 4)

## RND (🎵🎵)

### Ensoniq News

**Errata** — In last month's response to JC Harris, gremlins entered Ensoniq's computer and mis-typed their phone number. The correct number is (610) 647-3930, not 4940! Sorry for any confusion.

#### Ensoniq Announces the new KT-76 —

The KT-76 is an all-new weighted action workstation keyboard designed for the performing musician. It breaks the sound barrier with 64-voice polyphony and improved fidelity, making the KT-76 not only the most powerful 64-voice product on the market, but the best sounding one as well! The main features of the KT-76 are:

- 64-voice polyphony
- 76-key weighted action keyboard
- New large display (markedly larger than the KS/SQ keyboards!)
- 6 MB of wave ROM with 211 waveforms
- 2 complete pianos in waveform ROM (Ensoniq's acclaimed Bosendorfer and a new mellower Baldwin)
- 308 onboard sounds (including the full GM soundset) with many different piano, electric piano, organ, orchestral, pop and ethnic sounds
- SoundFinder™ for easy sound locating
- 13 new and improved effects algorithms (including digital delay!)
- 34 ROM Pitch Tables
- 100 Performance Preset locations
- General MIDI compatibility
- 8-zone MIDI master controller capability
- 16-track sequencer
- New Transpose Keyboard function
- PCMCIA cards for more sounds and sequencer memory (over 100,000 notes with MC-512 SRAM card, 160 sounds, 70 Performance Presets and sound demos on KTC series ROM cards)
- Optional MS-1 music stand
- Built-in ROM demo

The KT-76 has a suggested retail price of \$2495 and has just started shipping. For more information see your local Authorized Ensoniq Dealer or call 1-800-553-5151.

#### ASR OS 2.5 —

Ensoniq has finished up the long-awaited next O.S. for the ASR-10 which provides back-up of SCSI devices via the optional DI-10 digital interface to compatible DAT machines. The O.S. provides three functions: Back-up, Restore and Verify. It is available for free from your local dealer. Just bring in a blank floppy disk to copy it.

#### Automatic FAX Retrieval System —

Ensoniq has just instituted a new automatic FAX retrieval system to enable customers with FAX machines to get product specs, price lists, and application notes directly from Ensoniq. The number to call is 1-800-257-1439. Many of the application notes were written by esteemed *Hacker* answer-man, Clark Salisbury! Ensoniq hopes you find this new automated system a convenient way to get product information and tips for your favorite Ensoniq instrument.

#### Hyper-Wave and ASR Version 2 Application Guides —

Ensoniq now has available two *Application Guides* for their products. The first is a tutorial-based guide to Hyper-Wave programming for the TS Series instruments, written by Howard Massey (*On The Right Wavelength*). The second is a tutorial introduction to using the ASR-10s Version 2 Digital Audio Recording capability, written by Robby Berman, ASR Version 2 Digital Guru! These guides are available for \$5 from Ensoniq, and come free with newly purchased units when you return your completed warranty card. For more information call 1-800-553-5151.

#### Cakewalk Sysex Problem Fix for Ensoniq Gear!

A number of Ensoniq synthesizer users have complained that they can't get their Ensoniq gear to receive System Exclusive dumps correctly from their IBM PCs running Cakewalk. This problem was caused by Cakewalk's lack of required delays when transmitting certain types of Sysex dumps to Ensoniq equipment. The Sysex messages affected were Sequencer dumps on all Ensoniq gear, and Preset dumps on KS/SQ family products.

The problem has been fixed in the latest release of Cakewalk Professional for Windows, version 2.01. (Please note that there is no fix for Cakewalk for DOS users or for Cakewalk Pro for Windows, v1.00 users.)

To fix the Sysex timing problem, users must edit the configuration file named TTSSEQ.INI located in their C:\WINCAKE directory. The following three configuration lines must go in the [OPTIONS] section of TTSSEQ.INI:

```
SyxDelayAfterF7=1  
SyxSendDelayMsecs=200  
SyxSendPacketSize=65535
```

These settings cause Cakewalk to delay 200 milliseconds if it encounters an F7 in a System Exclusive bank. This gives the Ensoniq gear a required amount of "breathing" time which is necessary to process the Sysex transmission. Please note that timing requirements such as this are not unique to Ensoniq products — other keyboard manufacturers also rely on specific byte timings when receiving Sysex messages.

For further information regarding Cakewalk configuration files, users should consult their appropriate documentation.

### Third-Party News

We just plumb didn't have enough space on this page last month to welcome our new advertisers. So here they are: **Megalomedia** (Techno-Rave sample CD), and **Bigfoot Computer Services** (internal hard drive kits for ASRs). This month, we'd like to welcome **Pro-Rec**, one of the bigger sources for sounds. Be sure to check 'em all out.

Jeffrey Fisher, *Hacker* (business) writer and author of *How to Make Money Scoring Soundtracks and Jingles*, has a new address: 8341 Ripple Ridge, Darien, IL 60561. Phone: 708-971-1641.

### 8. Wise use of effects (of effects... of effects...)

Judicious use of effects, EQ and panning on your drum tracks can make all the difference in the world. A few general tips:

- Use little or no reverb on the kick drum, but get the snare wet.
- In general, avoid the use of delay effects on the standard drum kit, as this can muddy up the beat (unless that's what you're trying to do...).
- Roll off the frequencies on the drums that aren't necessary: middle on the kick, low end on the snare and cymbals, etc.
- To put some movement into the rhythm track, pan the toms and cymbals across the stereo field a bit (but not too drastically), but keep the kick and snare in the center. Shakers, claves, triangles and other miscellaneous instruments should also be spread out in the stereo field.
- Don't underestimate the power of drastic EQ settings for giving special effects. You don't need the latest digital effects gizmo to do some unique things (but a flexible, parametric EQ helps a lot!).

### 9. This is the Nineties. Update.

It is sometimes possible to guess the year (and sometimes the month!) that a popular song was released, based solely on the particular kick and snare sounds that were in vogue. Remember the "cannon" snare? The gated kick? Simmons toms? Radical flanging? Few things can date your tracks more quickly than using fad drum sounds (except perhaps a DX7 tine piano...). There is a tradeoff between blowing people away with how cool your drum sounds are, and keeping your sounds relevant for years to come. (This is true of all other synth sounds as well.) The bad news is: Distinct and radical sounds go out like the tide. The good news is: Sequencing allows you to change your drum sounds with just a few button presses.

## HYPERSONIQ

NEW PRODUCTS

Latter Sound Productions is introducing its first volume of sounds for the TS-10/12. Slappin' Bass, Stinging Brass and Luscious Strings. 60 sounds, 20 presets, 3 demo sequences, \$40. Latter Sound is also introducing a new line for the SQ/KS family: *Best of VFX*. 80 of the best VFX sounds converted for the SQ & KS. This volume includes that great Alto Sax and Solotrumpet. \$25. For further information, contact: Latter Sound, 1341 Westheaven Ct., Tallahassee, FL 32310. Phone: 904-575-5561.

React Recordings has released a new sampling CD: *Analog Keyboard Bass*. The first sampler to compile over 30 classic analog keyboards utilizing the best outboard professional gear. Over 750 samples, extensive documentation, under \$100. For further information, contact: React Recordings, 9157 Sunset Blvd., Suite 210, West Hollywood, CA 90069. Phone: 310-550-0233.

But what if you've already committed your fads to multitrack tape? Answer: You can trigger new drum sounds from the tape signal! I recently finished helping a friend remix an album project, and he had (thankfully) separated the kick and snare to different tracks. We ran outputs from the kick and snare tape tracks into the triggers of an Alesis D4, and successfully updated his tired old Yamaha RX-8 sounds. You can also trigger new sounds from your sampler if you have a trigger interface (like the D4, or the KAT midiKITI). Of course, if you use tape sync and run virtual MIDI tracks, updating your drums will be no problem.

### 10. Sequence other people's music

The best way I can think of to improve your sequencing chops on rhythm tracks is to listen to other people's songs, and then practice sequencing them. Go over the rhythm tracks with a fine tooth comb, and learn what makes them sound cool. Last year I sequenced about 25 cover tunes for a top forties band, and although they already had a drummer, I programmed in the drum tracks, mostly for the learning experience. It was like getting a Ph.D. in drum programming from Berklee! Okay, maybe it was more like a mail-order seminar. But the point is: there are all these great percussion ideas out there just waiting for you to discover them! Go forth and steal them! ...er, I mean, learn from them.

Once you've mastered these first ten tips, then you'll be ready for initiation into the next level of percussion programming. Until then — beat it! ■

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## Tasty Tidbits

Tape: *Vinnie V.*

Artist: Vince Vasquez.

Contact info: 2514 Stewart Ave., Medford, OR 97501.

Equipment: EPS, S-10, OB-8, Fostex 80, Syncman, Ampex 499 Tape, Alesis 1622 Mixer, Multiverb 2, DBX Limiter & Compressor, Microverb 2, Conn Tenor Sax, Selmer Soprano Sax, BK1 Mic, SoundCraftsman Stereo EQ., Fretless bass, and a Seagull sample from my local dump.

This is a very slick, sexy, sax-filled demo tape by Vinnie V. Everything is well thought-out, from the cassette cover to the accompanying large glossy photo stamped with contact information in elegant lettering. Aside from being big on image, there is a lot to pay attention to here.

Vinnie has followed the book of demo tapes to the letter. This is going to win big points. There are four short songs. *Not Lately*, *Bright Eyes*, *Carla* and *Soiled Napkins*. They are all tightly within the same genre of easy listening rock, slightly funky, sexy and danceable.

One very important note here: These songs are all too short — which is great. I wanted to hear more! This is a demo tape. This is only a sampler. If the record company marketing executive gets a taste of something (and usually that's all he gets) he is only going to pursue it if he hears dollar signs pouring out of every note.

There is not a lot distinguishing Vinnie's music from the rest of the pack. The music is very solid. The recording is all quite well done. The instruments are clear. All the parts are well played and mixed professionally. There is a real polished quality to the sound. There is also a sense of disconnection. These sound like typical backing tracks.

Some questions Vinnie might want to think about. What are your musical goals? Are you out to sell your songs? Is your goal to make it as a studio musician? The answers to these questions may guide you to create very different demo tapes.

The overall impact of this tape is very solid. With a few tweaks and a ear toward differentiating himself from the pack, Vinnie V. could really deliver something hot!

CD: *hOBbiTs & SpACesHipS* (Note these weird capitalizations are "as is" from the cover art.)

Artist: Bjrne Lynne (Dr. Awesome) and Seppo Herme (Fleshbrain).

Contact info: Bjrne A. Lynn, Schleppegrellgt. 10, 0556 Oslo, Norway.

Equipment: Ensoniq SQ-R+, Roland U220, Kawai K1-R11, Alesis DR-4, Roland Juno 2, Roland D50 and some effect processors.

This is, to overuse another reviewer's phrase, a sonic journey. A sonic adventure would perhaps be more accurate. There are a lot of mellow-but-wonderful patch beds that set the stage for their own atmosphere. From wandering to hard driving and back to soul searching, Bjrne and Seppo show off their keyboard chops in many variations and styles. Much of the jams sound like mainstream rock. I was reminded of several super groups along the way. There is a very professional polished feel to the entire endeavor.

The vocal work was strong but not fantastic with strong interpretation. As with so many artists who do it all, the singing here does not carry the CD. The voice is not the feature attraction.

The cover art bears a picture of a curious floating hooded little fellow (is this our hobbit?). The title didn't move me one way or the other, so I am leaning toward the conclusion that this has more personal than evocative meaning.

This is a very nicely done CD, but I wouldn't recommend that you buy it as an example of Ensoniq instruments used in this context. I would simply recommend that you buy it for the music. ■

If you want your tape run through the ringer, err, Hacker, just mail it off to: Basement Tapes, *Transoniq Hacker*, 1402 SW Upland Dr., Portland OR 97221.



*Bio: Daniel Mandel is a songwriter, sound designer, and has sold pro audio and keyboard equipment and produced demo tapes for local bands.*

# TS-10/12 All Nite Sax Show

## Part II — Pitch Tables

Jeffrey Rhoads

Well, hello again! Come on in before the cover goes up and there's a two horn minimum. We've got reeds galore so let's get right to business before another Honk hits the runway.

When we last saw the very lovely and talented Alto Saxes, they'd been choralized into 1 note, 3 step chords over a two octave range. That is, you hit a key, you hear the triad (chord). Rather than have the same old chord programmed across the entire zone, we were able to change the chord (intervals) in the second octave using the Custom Pitch Table: two octaves, two separate chords. Strike any key from C3 thru B3 and you'll hear a 7th chord (beginning on the root note). Play a key from C4 up thru B4 and you're rewarded with a 9th (beginning on the Major 3rd step). Why 7th and 9th chords? Because sax sections sound terrific in "blue" or funky settings. Count Basie, James Brown... you get the idea. Sections that employ the dominant 7th scale step (with a Major 3rd) used in 7th, 9th and 13th chords, virtually helped define Big Band and Funky horn arrangements.

So, we've got an entire "sax section" on a single keystroke. Some may query "What's the point?" or, those who are truly enlightened may remark "Wow Everett, betcha this would work preetty great for sequencing!"...Everett, you hit the goldarn nail on the head; these "sections" will surely spice up the next Automated Hoedown. (Sorry: I've been too long in the country.) But, we're not gonna stop just yet. How's about we create two other Sax programs? We just love that Custom Pitch Table so we'll build yet another sax "chord" or section. It might be nice to have a nice, fat horn in the bass as well as something to use "solo" in the middle and upper registers. Wait... that's three programs... enough to fill a TS preset. Yup, that's what we'll do; use a preset. First, though, we need to clean up and fine tune our first effort, the Alto Sax sections.

Any keys above or below the two octave's worth of three step chords, will sound with an annoying (dom) 7th interval. Since I know you've been saving this work every little step of the way, you've got a special disk and/or Ram location for "ALTOSAXSECT" (our new program name). Good. Call it up. (Since we will eventually need a preset for this exercise, you may want to free up two more slots in user Sounds Ram, preferably right next to ALTOSAXSECT.) We need to get rid of this pesky interval to keep the "section" isolated and "pure." We've already set voice 2's (the "middle" voice) key zone to within our two octave range. Now, we need to do the same for voice 1 and voice 3. In (Sounds Programming) edit mode, for voices 1 and 3, go to the Output Page. Once there, let KBD — SCALE (s) = ZON. Then set the LO/HI KEY (s) parameter to C3 — B4. The key/note intervals below C3 and

above B4 have thus been eliminated. At this point, any key strike outside the range C3 -B4 should result in silence.

Okay, it's time to re-visit the Custom Pitch Table. This time we'll use it for micro-tunings.

Wind instruments like the saxophone can produce noticeable inconsistencies in the relative pitch of each note. The "blowing" onto the reed is, in fact, expected to generate some pitch anomaly; this is often associated with a particular playing style. So, to more accurately reproduce the sound of a sax (or sax section), the relative pitch should be slightly different note to note.

Use the Select Voice button to look at the individual voices that make up ALTOSAXSECT. Note that EDIT PITCH-TABLE is still in the lower right corner of the display (instead of voices 5 and 6). Pressing either soft-button underneath EDIT PITCH-TABLE will reveal the Edit Pitch-Table page. Play key #C3; one octave below middle C. The display then shows us the Source Key — C3, the Playback Pitch — E3 and the Playback Pitch in Cents, which at present is 00. It all looks like this: KEY C3 = E3 AND 00 CENTS. (Please refer back to Part 1 of this article if any of this terminology seems unfamiliar.)

To effect a small relative detuning between notes (or against notes) — again, we'll call it micro or fine tuning, the value for the Playback Pitch in cents or CENTS must be altered. We can work within its programmable range of 00 to 99 CENTS. I've found the fine tune, or microtune values work best between 03 CENTS, which elicits almost no detuning, to about 17 or 18 CENTS, causing a much more noticeable change in note/tuning relationships. You can assign CENTS values almost at random within this range.

So, if KEY C3 = E3, then CENTS can equal any value between 03 and 18. I do recommend, though, that no two adjacent CENTS values be the same. You'll have to program this CENTS value on the Edit Pitch-Table page for every note in ALTOSAXSECT's range: C3 thru B4. The payoff here is that you'll end up with much more realistic horns.

We're not quite finished with poor ALTOSAXSECT yet! First, find a preset location in RAM. Then, in Sounds mode, double-click the soft button above "ALTOSAXSECT." Its underline flashes. Go back and click the Presets button: the original preset now reads: \* — EDITED — \*. Click Presets again. The display indicates that ALTOSAXSECT can now be part of a trio of programs (or, rather, program locations) that form the

preset. Press the soft button under \* WRITE \*. Hit the Preset button once more and hold it. (Notice the flashing SAVE) Save the preset by pressing the soft button over \* — EDITED — \* ...and that's it. (The other two programs which reside in the preset don't matter: we'll change them later.)

Now that ALTOSAXSECT resides safely in a preset... its final resting place... we can audibly bury it. In Track Parameters, press the Key Zone Velocity button twice. This will bring up the Velocity Range page. (Make sure "ALTOSAXSECT" is underlined and that its underline doesn't blink.)

Each of the paired values under the program cover a range from 000 to 127. The first number of the pair represents an LO velocity range or hard keystroke while the second value represents a HI range, generating sound with softer keystrokes. We want ALTOSAXSECT to emerge only through very hard velocity or keystrokes. (Using the corresponding soft button, we can go back and forth between the LO and HI values). Set the first or LO value to some number between 105 and 127. You'll have to hit the keys hard to bring out the ALTOSAXSECT. (Those with more tender fingers can lighten things a bit on the Velocity Sensitivity page.) If we like, we can use another program over ALTOSAXSECT; maybe one that responds to saner velocities. (Hmmm)

But, now, it's time to program yet another "section." This one will use Tenor Sax waves. (The Tenor Sax waves "cut" through a little bit more effectively. They seem harder and more raspy in timbre.) Naturally, we'll have to call it "TENRSAXSECT"! Like the venerable ALTOSAXSECT, it'll use three voices (on each key) and the Custom Pitch Table. Unlike ALTOSAXSECT, it's only going to cover one octave. Furthermore, its resulting "chord" will not be a 7th or a 9th but a... 13th! How do we conjure up TENRSAXSECT? Like we invented the ALTOSAXSECT which went before it. Begin by following all the steps outlined in last month's installment (Issue #109). Then continue your journey right through the setting of the Velocity Ranges in the preceding paragraph. There will only be a few differences in TENRSAXSECT: 1) The TENRSAXSECT octave spans from C5 thru B5; that's pretty high for a saxophone section. On the Pitch Page drop all 3 voices to OCTAVE = -2. 2) The fixed interval between voices 1 and 3 will be a Major 7th this time around. Go to the Pitch Page again, this time for voice 3. Let SEMITONE = +11... and 3) The Custom Pitch Table Source Key and Playback Pitch values (as they're shown in the Edit Pitch Table display will be as follows; C5 = F5+, C5+ = G5, D5 = G5+, D5+ = A5, E5 = A5+, F5 = B5, F5+ = C6, G5 = C5+, G5+ = D6, A5 = D6+, A5+ = E6 and B5 = F6. If you've kept track of all the steps plus these changes, by now, you should have a TENRSAXSECT nicely buried in the preset.

Finally, there's room for one more program in our preset. Let's see; we've got just three octaves of ALTOSAXSECT and TENRSAXSECT ...and they only sound if we slam the keys.

In effect (at more "functional" velocities), we've got 76 silent keys. We sure do need something. As was mentioned earlier, a full, funky bass horn (that provides a counterpoint to our sections) and a nice, bright solo sax won't be to awfully hard to come by.

To construct the "BAS+SOLOSAX," (our last program name) we're going to need 5 voices. Yup, 5 voices. The question of whether or not to use the extra voice in a program instead of the Custom Pitch Table will crop up from time to time. We've just got to examine our program goal in order to make a sound decision. BAS+SOLOSAX won't be using the Custom Pitch Table for microtuning. For this program to sound "beefy" enough in the bass, it needs the extra, or 5th voice. BAS+SOLOSAX could be built around the ROM TENOR-SAX program, but, we've already borrowed that one for TENSAXSECT. Use BARI-SAX in its place. You'll just have to raise the voices by an octave. While working on our two earlier efforts, we found that most of the default parameter values work quite nicely. BAS+SOLOSAX is a split program. First the Solo Sax:

Using the TENOR-SAX factory program, press the Select Voice button to view the Select Voice display. Un-mute the second TENOR-SAX voice by clicking its soft button. Press the Wave button. Select SOPRN-SAX from the wave list in the display. Go back to the Select Voice Page: you'll see SOPRN-SAX is now the second voice. Press the Pitch Mods button to get onto voice 2's Pitch Mods page. Create a detune effect using Envelope 1. Set ENV1 to +01. Also, adjust MODAMT to +30. Hit the Output button. On voice 2's Output page let VOL = +04 DB.

For voices 1 and 2, set the Solo Sax keyrange on the Output page: KBD — SCALE = ZON and LO/HI KEY is set to C4 — G7.

Setting up the Bass Sax is easy. Un-mute Tenor Sax voices 3 and 4 in the Select Voice display. On the Wave display for voice 3, change the Wave Class parameter to WAVEFORM. Then, select the Wave Name SAW-WAVE 1. Then detune it slightly. On voice 3's Pitch Page, let FINE = +11. Un-mute voice 5. On its Pitch Page, drop OCTAVE to -1. Lastly, for voices 3, 4 and 5, set their keyranges on the Output Page: KBD — SCALE = ZON with LO/HI KEY set to E1 — B3. You can balance to taste on this page using the VOL parameter....And, there you have... BAS+SOLOSAX. Add this program to the preset, and you're, as they say in Steakville... done. Oh.... what shall we name our preset? How about "CUSTSAXTABL"?

Well, what do you think? Are we going to dream about Custom Pitch Tables tonight? Is everybody all saxed out by now? Probably so, on both counts! With programming options like the Custom Pitch Table, it opens up new pathways to sound design. All we have to do... is choose to take them. ■



# Fresh Grooves From the Digital Kitchen

Mark Clifton

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Hip-hop is very much a sampling artform. Whether of instrumental lines, sound effects or even whole rhythm tracks, samples have become an integral part of the modern hip-hop sound. Many times these samples are lifted from albums, movies or other copyrighted sources, sources that must be credited and/or paid a set royalty if the sound is to be used commercially in your work. Many times this can lead to a confusing tangle of legal hassles and vague regulations, all of which can prove frustrating to the average musician or producer who would rather be spending their time making music than sitting in a room negotiating with a bunch of lawyers. If only someone would create a pool of hip-hop beats and sound effects that could be sampled and used in any way you see fit, without having to wade through all that legal muck!

This is the thought behind Eye & I/Voice Crystal's new "*Definitive Grooves*" sampling CD. Brewed up in the Digital Kitchen by producer Nate Goyer, the CD contains a collection of 99 brand new, completely original hip-hop break beats along with drum sounds, DJ scratches, horn hits, blurbs and drones, vocal and sound effects and basses.

The CD kicks off with the 99 rhythm loops, arranged in groups of five loops per track. While it would have been nice to see each loop get its own track number, this would have topped out the track capacity of the CD, so the compromise is understandable. Each loop plays only once, with most being about two bars long, though there are also some one- and four-bar loops thrown in. Also included is an extra downbeat at the end of each loop. This is so that when beats are sampled and flipped backwards they will still maintain a normal bass-snare-bass-snare pattern. This is a thoughtful feature to be included, but it means that, whether you plan to use the loops forward or backwards, you are going to have to go inside your sampler and perform a bit of surgery to remove that extra beat if you want to get them to loop properly (unless, of course, you like your hip-hop in 5/4). This can become more than just a minor inconvenience, especially if you don't have a whole lot of time on your hands.

As far as the quality of the beats goes, though, they are all very good, showcasing a wide variety of different flavors and styles. Most of the beats fit solidly into the hip-hop/rap/R+B

category with a bassy, heavily compressed sound that's suited mainly to hardcore styles rather than softer pop-type music. Made up mostly of just bass, snare, hi-hat and maybe some additional percussive sounds or audio effects, they are intended mainly to serve as foundations for building up denser grooves and rhythm tracks. Some are sparse and would work best under vocals or in instrumental backing tracks, while others are more busy and better suited for breaks or fills. Many of the loops sound noticeably effected, with some slight chorusing, phase shifting, flanging or reverb added. Since many hip-hop drum sounds are very dependent on effects, this is not a big problem except with the reverbs; many of them have fairly long decays which are abruptly cut off at the end of the loop. This may or may not cause a problem depending on how you string together your samples. You may have to add some effects of your own to the samples in order to maintain their continuity.

Also noticeable on many of the tracks is a bit of noise, probably from some of the older analog equipment used. This is not necessarily a bad thing, especially in hardcore styles that tend to benefit from a bit of dirt. But if you prefer audio clarity to sonic authenticity, you may have to draw up some kind of a compromise. Basically, with such a large number and diversity of different styles, you shouldn't have too much of a problem finding a loop that suits your particular needs.

Loops are listed in the CD's liner notes by number only, with no clue given as to style or potential uses — they seem to just be thrown together into random, uncategorized bunches. This can make it kind of hard to remember which loops would work best in a particular song if all you have to go by is numbers. Though it may sacrifice some degree of creative flexibility on the part of the user, it might have been more convenient if loops were categorized according to style or name. Thankfully, tempo markings and bar lengths are listed, a common courtesy overlooked on many commercial sampling CD's.

The rhythm loops are followed by a collection of bass drum (51 of 'em!), snare (52) and hi-hat samples (25 closed and 14 open). Like the loops, the power of these sounds lies in the variety and sheer number of options available. Both synth and acoustic sounds are represented, covering everything from rumbling subterranean kicks to short analog squawks. Noticeably absent are any kind of TR-808 or other popular drum machine sounds — all of the sounds featured were created from scratch. This offers a potential breath of fresh air to those who have grown tired of hearing the same old 808 cliches being recycled over and over on countless hip-

hop/dance tracks nowadays. Also absent are ride cymbals and any other kind of miscellaneous percussion instruments; the sounds provided are strictly bass, snare, hi-hat and nothing else. This kind of specialization is great if you need a large variety of sounds with which to build a good foundation to your rhythm tracks, but if you need more, then you're going to have to look to another source.

Each sound plays twice, with each hit lying a couple of seconds apart. This way, you can set the levels on your sampler's input meter the first time around and then do the actual sampling on the repeated hit. The only complaint about these sounds is in the way that they're arranged: They are thrown in groups of eight to ten on a track and are listed in the liner notes by number only. If you like a particular sound at the end of a track you're going to have to search through a bunch of other sounds in order to get to it. Luckily, track lengths are usually kept to under a minute.

Next up is a series of turntable scratches provided by session DJ, Pimp D. In addition to a bunch of scratches on bass, snare and hi-hat sounds, there are also manipulated phrases, sound effects and musical hits. While there is no way they can completely replace a live DJ, these samples should be able to provide excellent spice and fills for your average sequenced rhythm tracks. And by splicing and dicing them to taste, you should even be able to create fairly convincing solos. Many of the scratches are very rhythmic, but they weren't done to a click so there are no tempo marks listed, making it potentially more difficult to match them to a specific track. There are also slight, though noticeable, rhythmic fluctuations within the samples. Scratches play only once and are arranged in groups of 8 to 10 per track. Unlike loops and drum sounds, though, they are given descriptive names, as well as numbers, in the liner notes.

After the scratches is a small collection horn and orchestra hits. The horn sounds (listed in the notes as blurbs, hits and drones) include single-note hits, short riffs and falloffs. All of the sounds are obviously synthesized, severely limiting their usefulness in hip-hop music, which usually uses sampled horn hits from real R+B tracks. Especially puzzling is the fact that, though none of the sounds are realistic enough to fool anybody, most of them have sampled vinyl pops and sizzles overdubbed onto them. You may be able to find some kind of use for them in your music, but James Brown it ain't. Slightly better are the orchestra hits, many of which are actually real orchestra samples, albeit second-hand ones. Neglected in the liners is any clue to which key the samples are being played in, so it's up to you to figure this out.

The vocal sound effects are much more useful and include talk box hits and melodies, vocoded melodies, blurbs, phrases and numbers, speech synthesized numbers and phrases (in English, Spanish and Japanese), and so-called "Ball-Z" numbers and phrases, which are basically pitch shifted downward

for a sinister effect. The speech synthesized sounds are played straight, and many of the phrases convey an almost comical lack of soul, which may be useful in some situations. The sounds are given descriptive names in the liners, but no keys are given for the melodic phrases.

Also included with the vocal FX is a collection of 13 "Sexual Female Moans," consisting of various sounds and phrases that unfortunately can't be reprinted in a family magazine. You may find this either amusing or offensive depending on your particular views, and I would subtract political correctness points if it were not for the fact that these kinds of sounds are widely in demand in hip-hop music.

The CD is topped off by a collection of raw analog sine, pulse and triangle waves and a handful of "synth" and "rave" bass sounds. The analog waves are provided in a variety of different frequency bandwidths and added amounts of filter resonance. These raw waves can be sampled and manipulated to create an endless variety of different analog-type bass, drone and melodic sounds, and next to the drum samples, may be some of the most useful sounds on the CD. The basses are unspectacular but very solid and useful and distinctly analog in nature. Many of them display a good bit of sonic animation, but are always allowed to decay to a relatively static state before they cut off, making it easier to find a good loop point when sampled. All of the bass and waveform sounds play on the pitches of either D2 or D3, listed in the notes as "low" or "hi," respectively.

Overall, if you are a producer of rap or R+B music whose style leans toward the hardcore and you need a good, comprehensive set of rhythm loops, basic percussion sounds, DJ scratches and other sound effects rather than exotic percussion or melodic sounds, then the "*Definitive Grooves*" CD, at a price of \$79.95 a pop (considerably less than the \$100+ that many sampling CD's retail for), is a good deal. You must, however, be prepared to do some slicing and dicing of the rhythm loop samples before you're able to loop them, a fact that may be a major detracting point to some. If you need sounds that are geared more toward house and techno styles, or you're in search of a greater range of categories and genres than such a specialized CD offers, then you should probably shop around for another source. But if you're looking for a solid foundation on which to build your hip-hop tracks, then "*Definitive Grooves*" certainly lives up to its name. ■

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# Mics and Mic Techniques for Sampling

## Part 2

Michael Castronovo

A long time ago in Part 1 (July '92), I described the characteristics of various types of microphones. Most of the types (especially Dynamic and Condenser), are widely in use today. I also gave you an overview of how angles and distance apply to changing the sound of the recorded item. These changes (Axis and Proximity) can be used to modify, enhance or even distort your sampling project. If you haven't read Part 1, I suggest you do so, since most of the ideas we'll be using here are explained in the information laid out in that article. In this Part 2, there'll be a little hands-on application of what we've been discussing. This best way I know is with some general guidelines, followed by a few examples.

**Guideline #1:** Always use large diaphragm mics for loud items. The reason is that small diaphragm types usually tend to distort (overload) at high volume levels. Items that I would consider loud might be Kick bass drums, electric guitars, or (sometimes) even vocals. There are exceptions to the rule, like how an SM-57 often sounds good on a distortion guitar amp. The SM-57 is a small diaphragm mic, but it usually does handle the volume well. If you have a large diaphragm type, like a E.V. RE-20 or Sennenheiser 421, it's usually a safer bet in loud situations.

**Guideline #2 :** If you have to use *lots* of equalization to get the right tone (or sound), then you probably have the wrong mic or the wrong positioning. If your collection is limited and you don't have other mics to try, then apply the rules about proximity and axis to affect the sound. For example... let's say you're sampling a piano (multi-sampling would of course be more accurate), and the sound is too thin or tinny. Try a different mic, but if that's not available (or doesn't help), then start moving the mic around. The closer you get, the more bass you should start to hear. Also the axis will affect the tone, so make sure that the angle is straight enough to the string being sampled to get the fullness of the sound. The opposite also works. If the sound is too bassy, then you might try backing off the mic a couple inches from the string to add more treble. Be careful with this, since the farther away you place the mic, the more ambience you start to include. If you have an EPS-16 or ASR-10, you might not want any ambience since you can easily add various reverb styles later in the effects processing. On the other hand if you have an original EPS or a Mirage, than a little ambience might be just the thing to give some life to a sterile sound.

**Guideline #3:** For sounds with more high-end frequencies often a condenser mic works best. Many of the current condenser mics will pick up frequencies as high as 20,000 Hz. This allows your sample to retain all those rich upper har-

monics of things like violins, cymbals, and wind-chimes. Keep in mind that when those high frequencies are going into your sampler, you will have to make sure your sample rate is more than double the potential top frequency or you'll get sampling noise. This is usually referred to as aliasing noise. If you're using a good condenser mic, and sampling a crash cymbal, you'll probably want to set your sample rate at 44.1kHz (or higher). After the sample is recorded, and it is sounding fine, you can always conserve memory by converting the sampling rate downward. Do this until you start to hear undesirable qualities in the sound. These qualities might be distortion or simply too much loss of high end brightness.

By understanding that usually a dynamic (or ribbon) mic has lower frequency response, you can use your mic selection like a high-frequency filter to help you in creating a mellower sound for your sample. This may also help conserve memory. Here's how. If you pick a dynamic mic with a 14,000 Hz top frequency, we can now set our sample rate at 29kHz. This will cut our memory usage greatly. Certainly the sound won't be as bright, but most cassette tape machines only go up to about 15k or 16k anyway, and a good sounding 15k cymbal is usually sufficient for most situations. Keep in mind that all microphones vary in frequency response ratings, so make sure you buy and use the right type for the sampling you plan to do.

Talking about tape machines, I promised to try and make a quick mention how they could enhance your microphone sampling projects. It's very simple, by saving you time and effort and adding control! Setting up the sampling program for each sample (even in the ASR-10 like I have) takes a while. If you're sampling a drum kit or each string on an acoustic guitar, your musician friend will do lots of sitting and waiting. Each hit, (or note) has to be played... sampled... checked... looped (if necessary)... and then you have to set the keyboard to get ready for the next sample! If you progress at a similar pace to mine, then each individual sample takes 2 to 5 minutes, (More, if you're trying to make a good loop). You and your friend could spend all afternoon just doing 1 or 2 instruments. If you have a good quality tape recorder (preferably reel to reel, or high end cassette with noise reduction), then you can quickly acquire multiple hits (or strums). You can pick from these later to assemble your complete sample instrument. Naturally, if you have access to a DAT (Digital Audio Tape), machine this would of course be best for retaining all the quality of the original sound with no added tape noise. Even with using a tape recorder, you'll still have just as much work to do at the sampler, but you will have more (repeatable) control over the sounds you are want to sample.

In many ways, sampling keyboards does with sounds what computers do with data. By using some of these techniques you'll be better at avoiding the GIGO syndrome.

Happy sampling. ■

*Bio: Mike Castronovo owns a full time 16-track recording studio called "Studio B." He has been a keyboardist since a time near the Stone Age. Along with loving his wife Deb and two daughters Lisa and Amy, he has a special place in his heart for his ASR-10.*

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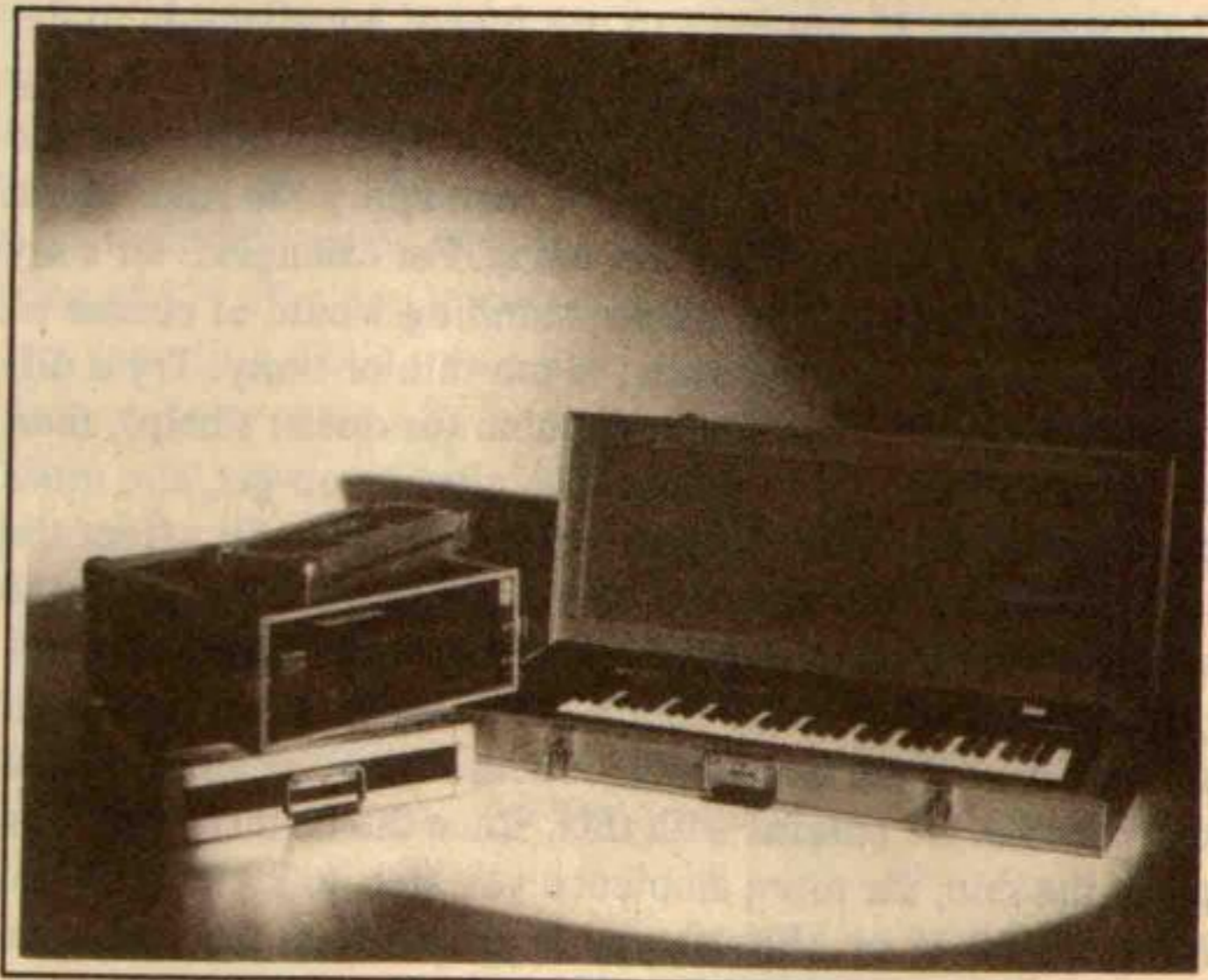
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# Mixing Down SQ/KS Sequences

## Part I

Brian Rost

*"Like a motorbike at a hot dog stand  
Fender Stratocaster  
Like the Dunkin' Donuts in Mattapan  
Fender, Fender, Fender  
Fender Stratocaster  
There's something about that sound"*

— Jonathan Richman

Not long ago, a friend of mine gave me a copy of his latest all-instrumental album. After listening to it, I asked him how much studio time he had spent. I was startled when he told me only two or three hours. It turns out that he sequenced the whole album at home on a single synthesizer, then recorded the master tape by going direct from the synthesizer's stereo outputs to a DAT tape. All the effects processing I heard had been done inside the synth itself!

The fact is that within your synthesizer is the equivalent of a studio's mixing board and effects processors. Sure, it's a bit simplified; your "mixer" is limited to volume and pan control and you have but one effects processor, instead of having full EQ control and access to a whole array of processors. However, one listen to the factory demos shows that the SQ/KS synthesizers can create some impressive mixes with such limited resources. In this article we will examine exactly how mixes are put together in pro studios and how we can use the same techniques on our sequences.

### Psychoacoustics

Sometimes it's easy to forget that when we listen to a recording, we are not listening to a live performance. What we are hearing is an illusion of a live performance. It can be a very powerful illusion; when we hear tons of reverb immediately our brains start thinking of cathedrals and caverns. The study of how our brains associate a sound with a spatial location is called psychoacoustics.

For instance, if we are listening over headphones to a synthetically generated sound processed with reverb, the real acoustic space is simply the earcups of the headphones, but the perceived space is something much different. Our brains use many audio clues in order to create the perception of space. Despite having only two ears, we can determine whether a sound is in front of us or behind us, to the left or to the right, above or below.

The trick of a successful mix is to manipulate the audio clues so as to give a sense of a particular space. This becomes ex-

tremely important with electronically generated sounds, since we usually record them direct to tape. In effect, the "source" of the sound becomes the loudspeakers of the playback system. The term "soundstage" is commonly used to describe the space a listener perceives when listening to a stereo system.

### Tools of the Trade

There are three factors which control how a sound is located in the soundstage: volume, panning and amount of reverberation. In general, the louder a sound is in volume, the closer it seems to be to the listener. The more reverb that is applied to the sound, the farther back in space it appears to be. Finally, panning locates the sound to the left or right of the listener.

The volume and panning of a given instrumental track in the mix is under the control of the sequencer, while the reverb is under control of the effects processor. By manipulating these, we can theoretically locate a given track anywhere between the two speakers and as far back behind the plane of the speakers as we would like. The limitation of a stereo system is that we cannot control the vertical dimensions, nor can we move sounds forward of the two speakers (unlike Quadraphonic and Dolby Surround systems which add loudspeakers to the rear of the listener).

### Go Left and You'll Be Right

The first thing to consider when setting up the mix is how we want to lay out the tracks across the soundstage. We can control the panning of a track in two ways, either use the panning programmed into the patch (by selecting SOUND as the pan setting on the track) or manually setting a pan location for the track. There is a difference between the two methods, for while at the patch level each voice may have its own pan position, at the track level all voices are panned to the same location.

Some patches use voice panning to good effect; a good example is the factory patch String Section, which pans two detuned voices hard left and right to create a wide, animated stereo image. The same patch sounds much smaller when both voices are panned to the same point. Drum kits also make use of voice panning to create a stereo image.

If we want to retain the stereo spread of a patch as well as want it centered in the mix, choosing SOUND at the track level is appropriate. If we do not want the sound to be centered, but we still want some spread, we can still choose SOUND at the patch level, but we will need to edit the patch

itself to modify the pan parameters. For all other patches (those using only one voice, or not taking advantage of voice panning), we will choose the pan location at the track level.

When choosing where to locate each track between the speakers, there are some good starting points to work from. First, if we are using bass and drums, these normally lie right in the center of the mix. Pads are also usually centered, although if we are using more than one pad, spreading them symmetrically around the center can work as well. Tracks for solo parts may be located anywhere, although symmetry should be kept in mind. For example, if there are three solo parts, having all three appear all the way to the left sounds strange. Having one in the center, and the other two spaced symmetrically around the center usually sounds good.

It may be easier to "design" the soundstage if we actually draw a picture of it out on paper. This helps to identify areas in the soundstage. The picture should appear relatively balanced and symmetrical. If each track has a unique pan location, then the sounds will not seem to cover each other up. Since the sequencer has only sixteen tracks, and there are fifteen possible pan locations at the track level, this is easy to accomplish. In most cases, tracks should not be panned all the way to the left or to the right, since this tends to sound unnatural, especially in headphones.

## In Deep

We have now placed all the tracks of the sequence along the left-right plane, so we can turn our attention to adding the illusion of depth to our mix. This is done with the use of reverb and volume control.

Imagine we are in a large cave. If we listen to a sound located at various distances from us, we will notice that the closer the sound is, the louder it will be and the ratio of direct sound to reverberant sound will be high. In general, to make a track appear to be more forward in the mix, it should be louder and have less reverb applied.

We can have three levels of reverb on a track; dry (no reverb at all) and whatever levels we choose for the FX1 and FX2 busses. If we have access to an external reverb processor, it's possible to put some additional reverb on the full mix, so that tracks assigned to the DRY bus get some reverb as well. At this point, we can choose how far back in the soundstage we would like tracks assigned to each of the busses to appear.

The rules of thumb here are similar to those for panning. If we use bass and drums, these should have relatively little reverb applied. Solo parts usually shouldn't have a lot of reverb applied either. Pads and background parts should receive the most reverb. When any track is heard by itself, it should sound like there is a bit too much reverb; in the mix, some of the reverb will be masked.

One side effect of using a lot of reverb is that sounds seem to move closer to the center of the soundstage as the amount of reverb is increased. The feed to the effects processor is monaural, so the level sent into the processor is independent of the pan position. The output of the processor is stereo, but feeds equal signal levels into each of the two channels. A track that is panned hard to one side will appear to move towards the center as the reverb amount is increased because more signal will be fed into the opposite channel.

The Low Frequency Decay parameter (which is only available in the HALL, CONCERT and ROOM reverbs) becomes useful if the reverb sounds too muddy. Higher settings cause the low frequencies to die out more quickly. If there is a lot of low frequency content in the sequence, increasing the level of this parameter can "open up" the sound more easily than trying to increase the level of the HF Bandwidth. It's especially useful to use this technique when using massive amounts of reverb in pop music where there is heavy bass and drums.

The multi-effect algorithms include reverb in combination with one or more other effects. Since the effects processor has more work to do, the amount of control we have over the reverb is much less. First off, there is no choice of algorithms. The sound is closer to the CONCERT and HALL algorithms than the ROOM or WARM CHAMBER. The only parameters available are the Decay Time and HF Damping. This gives us considerably less flexibility in crafting the soundstage. Probably the biggest loss is the Low Frequency Decay parameter, which is no longer available for removing mud from the reverb.

Most SQ/KS patches that emulate acoustic instruments do not use chorus, flanging or phasing, so we can take advantage of the reverb-only algorithms in sequences that use only these sounds. Most synthetic sounding patches do make use of one of the multi-effect algorithms, so we will be more limited in the control of the reverb sound when sequencing with these patches.

Well, we have to stop here for now. The secret of a good mix starts with creating the soundstage. We've seen how we can use the sequencer and effects processor to manipulate the aural clues for the listener. In Part II, we'll learn how to choose a compromise effect for our sequence and look at some of the fine points of using the reverb and distortion effects on multiple tracks. ■

*Bio: Brian Rost has been spotted around the Boston area playing cajun/zydeco bass with Swampstone recording artists Gator Bait. He still is trying to get their accordionist to go MIDI.*

# Putting the DP/4 To Work

## Part III — Rhythm Tracks

Michael Harvey

There is a famous thought experiment about the nature of change and reality, a variation of which goes as follows: After the battle of Trafalgar, Admiral Nelson's flagship, the *HMS Victory*, is moored at the harbor in Portsmouth and turned into a tourist attraction. The boat, being wooden, suffers in the elements. Occasionally, a plank rots and must be replaced with a new piece. After several centuries of upkeep, every piece of wood from the original boat is replaced; some planks below the water-line are replaced multiple times. The sign over the entrance to the ship still reads "*HMS Victory*." But is it? Is it really still Nelson's flagship?

The philosophers can debate whether the boat is or is not Nelson's ship, and if not, when exactly it stopped being so. One fact is apparent though: The original construction of the *Victory* was incredibly important in determining the shape, quality, and structure of the actual ship (whatever it may be) currently moored in Portsmouth Harbor. Assuming the craftsmen who replaced her various parts were skillful, the *Victory* one visits today should be true in spirit and form to the ship launched from the Manchester dry-docks some 300 years ago.

The basic rhythm tracks recorded as the first step in a typical recording project are a lot like the original *Victory*. Though every part may be replaced by overdubs, the original tracks live on in the finished recording. If the tempo of the original tracks wandered, the tempo in the final piece will wander; if the tuning was off, later performances will suffer. And if the original tracks were uninspired, subsequent performers will find it hard to deliver inspired performances of their own. Without going overboard, it pays to invest some time upfront to make our initial scratch tracks as exciting as possible. This investment will pay off in quality overdubs down the road.

Several installments ago (Issue #105), we set up the DP/4 for rhythm tracking: we calibrated levels, wired it into our system, and built the necessary Config patch. We then used two of the DP/4s' processing units to apply chorus and delay to individual parts in our song, a mini version of the mix-down process. This month, we want to "punch-up" the song. To do this, we'll approximate the work done by a mastering engineer, using signal processing — compression, equalization, and enhancement — to add presence and sizzle to our tracks.

Let's start with compression. To hear the compressor without any other signal processing, bypass Unit D by pressing its Unit Button twice. Now press Unit Button C and then the EDIT button. Scroll to algorithm #83, "EQ-Compressor."

Compressors are incredibly versatile and can be used for everything from removing excessive sibilance from vocals to automatically lowering a music track when a DJ begins to speak. They also excel at our goal — adding punch to final mixes — and are used heavily by mastering engineers and radio stations to that end. In pop music, compression has become an effect itself; the silky smooth texture of radio-ready pop is due in part to judicious use of compression at all stages of the recording project, from tracking to mastering.

To apply compression to our entire mix, patch Units C and D inline with your mixer's main outputs (refer to Issue #105 for step-by-step patching instructions) and leave the MIX parameter set to 99. Since group CD is the final output stage before tape, we want to keep levels hot; increase VOLUME to 99. Set COMPRESSOR GAIN to 0.

The next two parameters comprise the guts of any compressor: the compression ratio and threshold. The compression ratio is expressed as, you guessed it, a ratio. Compression ratios on the DP/4 range from 1.1:1 to infinity. A ratio of 4:1, to take a typical setting, will compress the processed signal such that a level increase of 4db at the input will be reduced to a 1db level increase at the output. (A compression ratio of 1:1, then, applies no compression; a ratio of infinity turns a compressor into a brick-wall limiter.) The second parameter, the threshold, draws a line in the audio sand. Signals that remain behind the line are unaffected. Signals that cross the line, however, are compressed according to the compression ratio. If the threshold is set relatively low, virtually the entire input signal will be compressed. Conversely, if the threshold is set very high, only peaks in signal level will be compressed.

To set these two parameters, start with the compression ratio and then use your ears to set the threshold. We can set the ratio by first thinking about our musical goals. Are we trying to prevent a digital multitrack from clipping? In that case, we want a high ratio to keep all peaks below the clipping threshold. Are we trying to help an uneven vocal performance stay afloat in the mix? Then a low ratio that won't destroy the singer's natural dynamics is called for. In the case at hand, we want to increase the energy level of an entire song by squashing the loudest and quietest parts closer together; a modest ratio of "3:1" works well for that task. Now, with your song playing, use the jog-wheel to slowly increase the threshold, starting from "0." Listen closely to your music. At some point, you will begin to hear the output level of your song decrease. The ideal threshold level lies in the region

where the compressed audio just begins to dip in volume. Depending on your input levels, you will probably find this region lying around 20db.

Scroll ahead one parameter. A simulated LED display shows the gain reduction applied by the compressor. If you used the above procedure and your ears aren't blown, you will probably see signal peaks being reduced by 3-5db.

The compressor's character is determined by the next two parameters: attack and release times. The attack time determines how quickly the compressor acts once a signal crosses the threshold. It should be set slow enough to allow instrument transients to pass through relatively uncompressed but fast enough to catch the body of the sound. Proper settings for this parameter depend heavily on source material. A snare drum (with a quick transient and short sound envelope) needs different handling than a saxophone (with a slow transient and a long envelope). Try a setting of 10ms on song mixes. The release time determines how long the compressor remains active after the input signal drops below the threshold. Set the release time too fast, and an annoying pumping action will be heard as the compressor releases loud signals prematurely; set it too slow, and the compressor will still be active when the next attack transient materializes. A setting of 50ms yields good results when compressing a mix.

The next three parameters control a built-in noise gate. For a song mix, we basically want the gate to stay completely out of the way, that is, open. Unless your song has unusually quiet bits, the default settings for the gate parameters should work fine.

We are now ready to apply equalization. Speaker designers have known for years that music "sounds better" with the bottom and top-ends boosted and have designed their consumer speakers to oblige. The "loudness" button found on most home-amplifiers performs a similar function. The DP/4 doesn't come with a loudness switch, but we can give our music a similar boost via the EQ section of the EQ-Compressor algorithm. For some serious punch without mud, try boosting bass frequencies in the range of 80Hz by about 6db. To add presence, try boosting mid-range frequencies in the range of 6kHz by 6db. Use the DP/4's "compare" feature to hear your song with and without the EQ-Compressor algorithm.

Before strapping on the headphones for overdubs, there is one final step we can take to really give our tracks some zizzle. Despite its name, the DP/4's Van Der Pol filter is an exciting algorithm. More accurately, it is an "exciter" algorithm. In a nutshell, an exciter adds high-frequency distortion to a signal. (Remember, distortion is any artifact not present in the original signal.) The resulting output, even though distorted, displays greater transparency and sparkle. Overuse, however, results in harsh, tinny tones. A word of

warning: this particular algorithm is addictive. Your ears will quickly adjust to the excited signal. Give your ears a break and re-check your mix before printing to tape or you may be stuck with shrill, brittle recordings.

Press Unit Button D to reactivate it and press the EDIT button. Scroll to parameter #89, "Van Der Pol Filter." This algorithm works by isolating a portion of the input signal via a bandpass filter, generating high-frequency overtones based on the filtered signal, and then recombining the processed and dry signals. The amount of processed signal is controlled by the MIX parameter. Start conservatively; try a setting of 22. Leave the VOLUME parameter set to 99.

The next two parameters define the width of the bandpass filter. Most of the body of your song probably resides in the frequencies below 5kHz. Try increasing HIGHPASS FC to 4000. Leave LOWPASS FC set to 16. Since a highpass and lowpass filter in series cause a drop in level, it's necessary to boost the filtered signal level somewhat. Too large a boost, however, will lead to annoying, grainy distortion. Try a setting of +15 for the FILTER GAIN parameter.

At this point, our flat and lifeless scratch sequence should be spacious and punchy, ready to inspire some great overdub performances. Unless you don't mind waiting for your sequencer to synch up to your multitrack every time you press the record button, it is helpful to record the scratch sequence to two tracks of your multitrack. (Don't forget to record a two-bar count-off.) These tracks can then be monitored as guide tracks during overdubbing. This step marks your final opportunity to change song structure and tempo: Once you start committing performances to tape, you are locked into your song arrangement, just as the builders of the Victory were locked into a final hull design once they set her keel.

With a pumped-up set of guide tracks on tape, we are ready to turn our attention to the real task at hand: recording a killer song. Just as a ship is carefully built, plank by plank, a good recording is built performance by performance. High quality workmanship and materials are required in both cases. And, of course, state-of-the-art tools. As we will see, the DP/4 provides a veritable tool chest in two rack-spaces. ■



*Bio: Michael Harvey earns his living as the Business Manager for Consumer Products for Microsoft Sweden. He spends his living on grown-up toys from Ensoniq and other companies in the military-industrial-musical complex.*



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# Performance Tips

Jack Stephen Tolin

"Welcome back, my friends, to the show that never ends."  
— Emerson, Lake, and Palmer

Ensoniq uses the slogan, "The Technology That Performs." For those of us who perform in front of audiences, this sounds very appealing. To use an instrument produced by a company that specializes in performance-oriented music equipment is to put oneself one step ahead of those who don't — the advantage is presumably one of time and effort.

The only problem in actually making the *best* use of such an instrument involves the fool behind the thing! So, being such, I've accumulated a few tips up as a result of performing "out" at a variety of places. Like they say, wisdom comes from experience. What follows is some of the pieces of wisdom that I've picked up as result of experiencing the problems leading up to them. Hopefully, this will provide you with an atmosphere of less tension and anxiety when you find yourself in similar situations.

**Tip #1:** Always take more cords and adapters than you know you'll need. In fact, just take 'em all. Many of us have probably experienced that frantic running around for a Radio Shack ten minutes before show time. To those who haven't (yet) — take heed and avoid it.

**Tip #2:** Check your equipment before you leave. Make sure you have everything you'll need packed and ready to go in the vehicle *before* you hit the road. (Don't forget those little minor things like the amp...)

**Tip #3:** Get there early. This is especially true if you don't take your own sound system. There are too many reasons to even begin to mention them here. Study the other tips and you'll figure out some of them.

**Tip #4:** *Always* do a sound check. You really need to do this to set your initial volume levels and mix.

**Tip #5:** If you plan to edit sequence data before a performance — and you know you've done it — make sure you get to wherever you're going early enough so you can *take your time*. Speed-wizards like you and me who can run through a series of SQ-1 ops in the blink of an eye sometimes get ahead of the computer and end up with errors and lost data.

**Tip #6:** If you have an entire system that is based on MIDI, try recording all of your static data (the material that stays exactly the same every time) onto tape. For a few of my songs, I've recorded umpteen tracks of sequencer data onto two tracks of fast speed, four-track cassette with dbx, and mixed down to

normal stereo with Dolby C and HX pro. Sound quality is comparable to "live" sequencers. I leave out all of the performance data (e.g., lead vocals, keyboard accompaniment, solo instruments, and so on) so that we can perform along with the tape. Obviously, some people subscribe to the popular belief that this is the worst thing that any musician could ever do. But, if it works, makes things easier, sounds just as good — and you would have played it all from a sequencer *anyway* — why not? Of course, this may not apply to full band situations.

**Tip #7:** If you use Tip #6 (and possibly even if you don't), take advantage of the SQ/KS preset. Set up all of the sounds you will need for each particular song, give it the same name as the song, and save the preset so that the first sound selected is the first sound that you will need to play for that song. It may even be easier for you if you place the first sound you need on track 1, the second on track 2, and so on. When you change presets between songs, the computer will ask if you wish to save changes. Press No and move on to the next preset.

**Tip #8:** If any of the programs you use are supposed to be layered, try what I did: 1) place the layers under their base programs according to track number (for example, if you layer a sound with track 1, place it on track 5 directly below it). 2) Save the preset. 3) When you come back to the preset you will see what sounds you use for the layer so you can punch it in when when you come to the part of the song that includes it. Also, remember to lower the volume in the mix for *both* (or *all*) of the sounds in the layer. Remember to test all layer volumes by playing the entire sound along with the rest of the song during a sound check. And, if you haven't tried layering — try it! It's easy.

**Tip #9:** If you're going to be using layered sounds while performing along with the sequencer (and even if you're not), consider your polyphony at any given time. I usually only use layered sounds over sections I have programmed ahead of time to have as few instruments sounding off at the same time as possible. Ask yourself questions like, "Can I conserve voices by cutting down the voices in the layered (or unlayered) programs themselves?" "Do I really need to have the brass section playing *three* notes on count one?" "Do I really need to play a layered sound during this part of the song?" Sometimes having three extra voices available can really do the trick. It's certainly more natural than having voices stolen.

**Tip #10:** And finally, if you're using synthesizers as well as samplers, you need to either turn the synthesizers down or the samplers up in volume. When I run my SQ-1 PLUS 32 and my EPS-16 PLUS through the same mixer at the same time, the SQ is much louder than the EPS. ■

**Prog: HarpsiKeys**

By: Dan Richards, Canton, OH

Notes: A nice keyboard patch. Not a harpsichord, but kinda a hybrid harpsichord/piano.

WAVE				LFO				AMP			
	1	2	3		1	2	3		1	2	3
Select Voice	On	Off	Off	LFO Speed	0			Initial	99		
Wave Class	ST.W			Noise Rate	0			Peak	99		
Wave	PrnVar			Level	0			Break	75		
Delay Time	0			Delay	0			Sustain	0		
Wave Direction	Forward			MODSRC	Off			Attack	0		
Start Index	0			Wave	Tri			Decay 1	50		
MODSCR	Off			Restart	Off			Decay 2	70		
MODAMT	0							Release	30		
Restrk Decay	0							Vel-Level	26		
								Vel-Attack	0		
								Vel Curve	Linear		
								Mode	Norm		
								KBD Track	0		

PITCH				FILTER			
	1	2	3		1	2	3
Octave	0			Filter 1	2LP		
Semitone	0			Filter 2	2LP		
Fine	0			FC1 Cutoff	0		
ENV1	0			ENV 2	+99		
LFO	0			FC1 KBD	0		
MODSCR	Off			MODSCR	Off		
MODAMT	0			MODAMT	0		
KBD Ptch Track	On			FC2 Cutoff	0		
Glide	Off			ENV2	+99		
Glide Time	0			FC2 KBD	0		
				FC1MOD-FC2	Off		

ENV1				ENV2			
	1	2	3		1	2	3
Initial				Initial	99		
Peak				Peak	95		
Break				Break	85		
Sustain				Sustain	0		
Attack				Attack	50		
Decay 1				Decay 1	50		
Decay 2				Decay 2	75		
Release				Release	30		
Vel-Level				Vel-Level	19		
Vel-Attack				Vel-Attack	0		
Vel Curve				Vel Curve	Convex		
Mode				Mode	Norm		
KBD Track				KBD Track	0		

OUTPUT			
	1	2	3
VOL	99		
Boost	Off		
MODSRC	Off		
MODAMT	0		
KBD Scale	0		
Key Range	A0C8		
Output Bus	FX1		
Priority	Med		
Pan	0		
Vel window	0		

EFFECTS — CHORUS AND REVERB			
	1	2	3
FX-1	25	FX-2	25
Decay time	20	HF Damping	0
Chorus Rate	20	Chorus Depth	22
Chorus Center	50		
Feedback	0		
Chorus Level	48		
MOD (Dest)	Decay		
BY (MODSRC)	Modwheel		
MODAMT	+50		

**The Hack:** I played this patch from the TS-12 directly below my SQ-1. I think its piano keyboard is the best weighted action I've played so I'll use it while building sounds on the SQ-1+ — especially keyboard sounds. A Suitcase Rhodes program from the TS was still sounding when I auditioned "HarpsiKeys" — wait — that's a really good mix. Creating a second-voice Rhodes piano is a snap. In the Wave page, turn on Voice 2. From the Expansion waveset, select ELEC PIANO 1. You can use most of Voice 1's parameter values for Voice 2 with the following exceptions: In the Output page for Voice1 (the original voice) set PAN to -42. Same page for Voice 2; this time PAN can equal +42. Again, on the Output page for Voice 2, adjust VOL to 90. For Voice 2, both Env2 and the Amp Envelope must be changed. In both cases, you can use the PIANO DECAY default envelope. (While in the envelope pages, press Enter for the list of preset envelopes.) I decided to let "HarpsiKeys" emerge

over the Rhodes using velocity. If you decide to try this, adjust Voice 1's velocity values, again, for both Env2 and the Amp envelope. Those values are: LevV=72, AtckV=26 and VelCurv=CONCAVE. These settings just reflect my pref's — you can detune, derive, deflate or demolish all you like with the added voice!

Jeffrey Rhoads



*Bio: Jeffrey Rhoads has been a keyboardist/composer on the Philadelphia Jazz and R + B scene for a period of time resembling forever. He has an interest in cinema and has developed some film courses. Jeff still believes in magic and longs for city lights.*

**Hackerpatch** is intended to be a place where patch vendors can show their wares and musicians can share their goodies and impress their friends. Once something's published here, it's free for all. Please don't submit patches that you know to be minor tweaks of copyrighted commercial patches unless you have permission from the copyright owner. All submitted patches are subject to consideration for mutilation and comments by Sam Mims and Jeffrey Rhoads — our resident patch analysts. If you send in a patch, please include your phone number. Requests for particular patches are also very welcome.

# SD & VFX Hackerpatch

Sam Mims

## SD & VFX Prog: CHORUS\*B3

By: Roy Bertucci, Lafayette, LA

**NOTES:** This organ sounds good in mono and even better in stereo. It was modeled after the Korg C2 portable organ, and was developed using the effects for movement and the LFO for the Leslie; the mod wheel controls the Leslie effect via the LFO's panning and output modulations.

**THE HACK:** The organ sound is nice, but the overdriven output adds a rather nasty crackling when several notes are played at once. Programmers should keep in

WAVES	1	2	3	4	5	6
Wave	OrganV3	OrganV3	Sinewave	Sinewave		
Wave Class	Waveform	Waveform	Waveform	Waveform		
Delay	007	008	000	006		
Start	-	-	-	-		

MOD MIXER	1	2	3	4	5	6
SRC-1	-	-	-	-		
SRC-2	-	-	-	-		
SRC-2 Scale	-	-	-	-		
SRC-2 Shape	-	-	-	-		

PITCH	1	2	3	4	5	6
Octave	0	0	+1	+1		
Semitone	00	00	+07	+00		
Fine	-02	+02	+00	+02		
Pitch Table	System	System	System	System		

PITCH MODS	1	2	3	4	5	6
MODSRC	Off	Off	Off	Noise		
MODAMT	-	-	-	+12		
Glide	None	None	None	None		
ENV1	+00	+00	+00	+00		
LFO1	+00	+01	+07	+04		

FILTER 1	1	2	3	4	5	6
Mode	LP3	LP3	LP3	LP3		
Cutoff	127	127	122	068		
KBD	00	00	00	-08		
MODSRC	Off	Off	Off	Off		
MODAMT	-	-	-	-		
ENV2	+00	+00	+99	+41		

FILTER 2	1	2	3	4	5	6
Mode	LP1	LP1	HP1	LP1		
Cutoff	078	078	082	077		
KBD	+64	+64	+00	+66		
MODSRC	Timbr	Timbr	Off	Timbr		
MODAMT	-35	-35	-	-37		
ENV2	+48	+48	+00	+46		

OUTPUT	1	2	3	4	5	6
VOL	82	99	40	99		
MODSRC	LFO	LFO	Off	Noise		
MODAMT	+16	-16	-	+22		
KBD Scale	+21	+02	+00	+00		
LO/HI Key	A0-B7	A0-B7	C2-C7	A0-B7		
Dest Bus	FX1	FX1	FX1	FX1		
Pan	99	00	50	50		
MODSRC	LFO	LFO	Off	LFO		
MODAMT	-24	+32	-	-28		
Pre-Gain	On	Off	Off	Off		
Voice Prior	Med	Med	Med	Lo		
Vel Thresh	+000	+000	+000	+000		

LFO	1	2	3	4	5	6
Rate	18	18	20	28		
MODSRC	Wheel	Wheel	Wheel	Off		
MODAMT	+50	+50	+50	-		
Level	75	75	00	00		
MODSRC	Off	Wheel	Off	Off		
Delay	00	00	00	00		
Waveshape	Sine	Triangle	Triangle	Triangle		
Restart	On	On	On	Off		
Noise SRC RT	00	62	00	00		

mind that a VOL setting of 99 on the output page should normally be used for a single-voiced sound. When other voices are added to the mix, the VOL levels should be decreased to compensate. An even more serious culprit is the Pre-Gain parameter. When PRE-GAIN=ON, a VOL of 62 is equivalent to full volume with the pre-gain off. Here, pre-gain is on for Voice 1, with the volume up to 82. So in Roy's four-voice patch, two voices are set to 99, and one is effectively set to 119! To eliminate the snap, crackle, and pop, go to the Select Voice page, then double-click the Select Voice button. This should underline all four of the used voices in group edit mode. Now simply press the Output button, select VOL, and press the Down arrow button about 15 times. *Don't use the data slider*, as this will change all four VOL settings to the same value, instead of keeping their relative values. Another problem, inherent to the keyboard, is that fast envelope releases cause a dirty clicking on key-ups. Setting the RELEASE time of Env 3 to 15 on all four voices helps out.

- Sam Mims

### SELECT VOICE

00	1	2	3	4
0*	1	2	3	4
*0	1	2	3	4
**	1	2	3	4

ENV2	1	2	3	4	5	6
Initial	-	-	99	01		
Peak	-	-	99	39		
Break 1	-	-	99	00		
Break 2	-	-	99	00		
Sustain	-	-	67	00		
Attack	-	-	00	02		
Decay 1	-	-	00	03		
Decay 2	-	-	00	41		
Decay 3	-	-	00	41		
Release	-	-	00	17		
KBD Track	-	-	00	00		
Vel Curve	-	-	Convex	QkRise		
Mode	-	-	Norm	Norm		
Vel-Level	-	-	00	00		
Vel-Attack	-	-	00	00		

ENV3	1	2	3	4	5	6
Initial	98	98	99	98		
Peak	98	95	99	04		
Break 1	98	98	54	00		
Break 2	98	98	37	00		
Sustain	98	98	36	00		
Attack	19	19	00	40		
Decay 1	21	21	57	21		
Decay 2	21	21	13	21		
Decay 3	21	21	00	21		
Release	03	00	10	00		
KBD Track	00	00	00	00		
Vel Curve	Cnvx1	Cnvx1	Cnvx2	Cnvx1		
Mode	Norm	Norm	Norm	Norm		
Vel-Level	00	00	00	00		
Vel-Attack	00	00	00	00		

### PGM CONTROL

Pitch Table	Off
Bend Range	**
Delay	X1
Restrike	00
Glide Time	00

### EFFECTS (1)

Effect	Chorus + Reverb2
Decay	40
FX1	34
FX2	19

### EFFECTS (2)

Rate	19
Depth	08
Delay	020
ModRate	+16
ModDepth	00
Mix	53

### EFFECTS (3)

Waveshape	Tri
MODSRC	Modwheel
Reverb HF Cut	Off

### PERFORMANCE

Timbre	00
Release	00
Pressure	Key

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### FREE CLASSIFIEDS!

Well - within limits. We're offering free classified advertising (up to 40 words) for your sampled sounds or patches. Additional words, or ads for other products or services, are \$0.25/word per issue (BOLD type: \$0.45/word). Unless renewed, freebie ads are removed after 2 issues. While you're welcome to resell copyrighted sounds and programs that you no longer have any use for, ads for *copies* of copyrighted material will not be accepted. Sorry - we can't take ad dictation over the phone!

# The Interface

Letters for The Interface may be sent to any of the following addresses:

U.S. Mail - The Interface, Transoniq Hacker, 1402 SW Upland Dr., Portland, OR 97221

Electronic mail - GENIE Network: TRANSONIQ, CompuServe: 73260,3353, Internet (via CS): 73260.3353@compuserve.com.

This is probably one of the most open forums in the music industry. Letter writers are asked to please keep the vitriol to a minimum. Readers are reminded to take everything with a grain of salt. Resident answer-man is Clark Salisbury (CS). Letter publication is subject to space considerations.

Subj: TS-12 Keyboard Tracking

In my TS-12 manual it talks about keyboard scaling as a modulator for output filters, etc. This concept I remember fondly from my DX-7 of ten years ago. However, on my DX-7 I could adjust the "breakpoint" whereas it seems that this is set at F4 on the TS-12.

Can this key be adjusted up or down a la the DX-7? If not, please suggest this to Ensoniq as it can be an indispensable feature in creating balanced sounds and wild splits without using up a lot of polyphony.

Thanks,  
jc Harris  
Suntower Systems [70242,1520]

[CS - You can usually simulate the effect of having a moveable breakpoint using the keyboard scaling in combination with the initial level set for the scaling target. In other words, if you want to apply keyboard scaling to the filter, remember that you can adjust a filter's initial cutoff level, as well as the scaling amount. This should produce the same effects as changing breakpoints on a scaling parameter (for the most part). Also, splitting the keyboard does not use up polyphony. Two voices assigned to different keyboard zones require no more polyphony than a single voice assigned across the entire keyboard. Creating pseudo-splits using key scaling, however, can rob you of polyphony since the voices scaled in this manner would overlap. Technically, then, you've created a layer of sounds, even though voices scaled down might not be loud enough to be heard in the layer. Since each sound in a layer requires its own voices, you can end up using more voices than you need.]

Dear Mr. T.H.

1. I'm looking for a Wind sound/patch for my KS-32. Any suggestions?
2. How does one learn to program his/her own sounds? Any generic books, videos, or courses?
3. Would the following be worth-while to save a few dollars? The need is to provide a

portable sequence save/load mechanism for my KS-32. I have an old Amstrad portable PC (almost the sewing machine size variety), but it works and has two 720k disk drives. I don't think it has any capability for expansion slots. Could I buy an external MIDI interface card for it, then run some DOS-based MIDI software to store/retrieve sequences? Then, when I don't need portability I could use the portable MIDI card with some WINDOWS based software on my large home PC.

Thanks in Advance!  
Neal Walters  
Compuserve: 76357,2511

[CS - 1) In the Ensoniq library there is a sound called "Wind Storm" found on the EX-2 card (location B19) that you might check out. Also, you might give a listen to "Rain & Thunder" (location B78 on SC-2), or even "Surf" (location B70 on SC-5).

2) There are a number of materials dealing with programming. You might check the Mix Bookshelf (1-800-233-9604) for likely titles. Also, TH ran a series of articles a couple of years ago on programming the SQ1/2; any of this info will apply directly to the KS-32. Contact our lovely editorial staff to check on the availability of these.

3) Sounds like a plan to me. You should be able to find an interface that works with either computer, and floppy disks are a lot cheaper than RAM cards.]

[TH - Be sure to check out Covert Videos (ad elsewhere in this issue) and Talking Owners Manuals (21405 Brookhurst, Huntington Beach, CA 92646).]

To all TS-12 owners:

Has anyone found a decent carrying case for their TS-12?

The shop has been calling Protek, but they apparently haven't measured a TS-12 yet. If they are the best, I can wait, but the original Ensoniq box is getting ratty. Maybe Ensoniq would mail me an empty box for a modest S&H charge. Let me know if there are other good recommended cases.

Dave Markstein  
70353.1627@compuserve.com

[CS - There are a number of manufacturers of cases for keyboards (and other) instruments. If you can't find what you need through Protek, you might want to consider checking out what other manufacturers have to offer (Anvil, Calzone, and SKB all come to mind, but there are a number of others as well. Check out publications such as Keyboard, Electronic Musician, and Mix for ads from likely sources. Chances are that if you find something you like, your local dealer could order it for you.]

[TH - Opticase (see ad elsewhere in this issue) puts together cases for whatever you need. They said they'd be happy to do a case for the TS-12. Give 'em a call.]

[Ensoniq - We know that Standtastic (800-876-6923) has a soft carrying case for the TS-12. We're sure that there are others.]

Ye Olde Interface:

In response to Martin Urwaleck's letter in the May issue, 160-voice SQ RAM cards are available from Syntaur Productions for \$97.95 (plus \$6 for foreign shipping). These contain our 80-sound SQ Set 1 (reviewed in the March issue), and have 80 free user locations as well.

These RAM cards are quite expensive because only one source in Japan manufactures them, and because they are not used in other consumer products like the PCMCIA cards that are used in laptop computers. In defense of the high price, the cards are of a better design than most keyboard RAM cards, as the contacts are shielded within the housing, rather than exposed. This makes the risk of losing data due to static electricity shocks much lower.

Martin's idea of storing sounds to his PC will certainly save a bundle of money, and Clark was correct about his reference to the "GetIt" shareware. GetIt 3.0 does sysex transfers quite easily, as well as a number of other MIDI functions. We distribute it, in fact, with all the products that we sell on IBM sysex disk (including SQ Set 1, this time for \$39.95 plus shipping). It is highly recommended.

At the risk of this sounding like an ad, Roseanne McKinley asks in the same issue whether SQ-1 sound sets are available that work in the early models without the expanded waveform memory. We purposely did not use any of the expansion waves in our SQ Set 1, exactly for this reason. It is compatible with every model in the series.

And finally, from the same issue, I thought I might clarify Robert Johnson's questions about the TS series General MIDI upgrade. (We were contracted by Ensoniq to program the General MIDI sounds in the TS.) While it is certainly possible, as Clark states, to play back external sequences on the TS-10, the SD-1, or any of Ensoniq's other current instruments, it would be, in practice, somewhat of a nightmare to do General MIDI things. You would have to get all the right sounds together, get them on the correct MIDI channels, and get the complex drum maps correct. The TS General MIDI mode works a bit of magic to do all of this for you.

When you enter General MIDI mode, the TS reads new sounds from ROM memory that are near duplicates of the patches in the Roland Sound Canvas (the de facto standard for GM sounds). These sounds aren't available as normal programs; you must enter General MIDI mode to access them. The result is that on all 16 MIDI channels, the program changes in a GM sequence will call up the exact sound the arranger intended to use — no hassle, no fuss. On MIDI channel 10, the TS will automatically access the specified GM drum kit.

There are several factors that make this impractical to emulate with an SD-1. First of all, the SD-1 (and the TS keyboards without General MIDI) can only play 12 sounds multitimbrally, rather than the 16 specified by General MIDI. Secondly, any program changes on MIDI channel 10, intended to call up a different drum map, would actually call up a sound from the regular program banks instead. Thirdly, only 120 sound locations are available, rather than the 128 called for by General MIDI. And finally, unless one creates exact duplicates of the Sound Canvas patches and drum maps, sequences obtained from other arrangers won't sound exactly like they should.

In short, if you plan to do any playback of GM material, the TS upgrade is a must.

Sam S. Mims, Syntaur Productions  
4241 W. Alabama #10  
Houston, TX 77027  
(713) 965-9041

[CS — I have to agree with Sam; for most of us, setting up all the sounds and drum maps required for GM compatibility would be a royal pain. My original point, though, was that if you didn't find a need for GM compatibility when you bought the TS-10, you may not need it now. The best candidates for the Ensoniq GM upgrade are those who plan to use sequences created by other sequence developers, those who plan to create and market (or exchange) sequences, and those who plan to use their instrument within some sort of multi-media system (CD-ROM, computer games, etc.). If you don't fit any of these categories, (and you don't think you will in the future), purchasing the GM upgrade may not be the wisest use of your money.]

To the Interface,

I am a true novice in keyboard playing and the electronics that surround them. My decision to buy a KS-32 was highly due to its price/programmability/ease of programming ratio. I have noticed that the KS-32 receives nominal attention with negative trends in the KS-32 coverage. Will KS-32 owners soon be left without group therapy?

Here is my MIDI set-up: KS-32, 386sx PC w/4 meg RAM, Midiman MM-401 card and Powertracks Pro for Windows.

When recording to the PC sequencer individual keys will change pitch sporadically (eg. E3 will play E2 for one key stroke). There are no problems playing from the PC sequencer.

I have been successful in recording on the KS-32's sequencer. How can I record the data in the KS-32 sequencer into the PC sequencer?

Is it possible to use the KS-32 presets as the voices for recording to the external MIDI? The goal is layering sounds and recording in one pass.

My consternation is based on the fact that presets can all receive at the same time from the MIDI (each on a different channel) so I hope this relationship can be reversed.

Thank you,  
Bob Graham  
St Anthony, Minnesota

[CS — I'm afraid I haven't a clue as to what might be causing your pitch-change problems (unless it's some sort of bizarre man-

ifestation of a MIDI-loop problem, in which you are "echoing" data sent from your KS-32 through the PC and then back to the KS-32).

It should be no big deal to transfer your sequences from the KS-32 to the PC — the process involves synchronizing the two devices (usually, I recommend syncing the computer to the master device — in this case, your KS-32), then putting the computer into record mode and hitting the "play" button on the KS-32. Powertracks must be set up to record multi-channel MIDI data (and each of the tracks playing from the KS-32 must be assigned a unique MIDI channel number), but as I am unfamiliar with Powertracks, I'm afraid I can't provide you with more specific information. I might recommend getting in touch with the Powertracks people for additional advice, and you might mention your problem with pitch-changing to them; perhaps they'll have some insight.

As far as presets go, you should be able to use them in the way you describe — provided that each sound in the preset is set to transmit via MIDI (set the track status for each track to "Both"), and that each sound is as-

Maybe your question has already been answered —

## Interface On A Disk

Ever hunt through that old stack of *Hackers* looking for that reference to Bernoulli drives — somewhere in the letters column? By using the Back Issue Index you can usually find the article you're looking for — but letters are different. Well, lucky you, here's your solution — electronic files of raw text from the last four years' worth of letters columns — all ready to be pattern searched for whatever you want. (DOS formatted, 720k, 3.5")

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### Transoniq Hacker

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signed to a unique channel. Again, Powertracks must be set to record multichannel MIDI data; consult your owner's manual (or talk to the Powertracks people) for information on how to set this up.]

Transoniq Hacker Interface,

Regarding unstable ESQ-1 LFO synchronization: In *Transoniq Hacker* #26, page 11, Jim Johnson describes ESQ-1 LFO rhythmic synchronization and magic Tempo settings. Issue #35, pages 1 and 2, Issue #37, page 7, and the Paul Timmermans' ESQ-1 Patch Manual, page 31 (recently listed in the Classifieds) all describe possibilities for ESQ-1 LFO rhythmic patches. Hold down one key, and an automatic rhythm, echo, or melodic pattern occurs.

Yet all the above articles fail to mention one little important flaw. Unless it is just my ESQ-1, Version 3.5, the LFO rhythmic patches on the ESQ-1 slow up when used as an accompaniment. Play another ESQ-1 patch along with the LFO rhythmic patch across a split keyboard – the LFO rhythm slows down. The LFO speeds up again to correct tempo when you stop playing along.

Example: with the ESQ-1 keyboard split, play a trill or arpeggio piano patch with one hand. Let the other hand hold down one key to trigger an LFO rhythm patch such as the one by Jim Johnson or Paul Timmermans mentioned above. The rhythm pattern triggered by one key held down adheres to the metronome settings Jim Johnson describes (Issue #26) provided you do NOT play the trill – or anything. The automatic LFO rhythms do not remain stable. Can the LFOs on the ESQ-1 and other Ensoniq synthesizers be made stable in this situation?

Sincerely,  
G. Jaeger  
Washington, MO

[CS – In the land of digital musical instruments, timing is everything. Since these instruments need to execute instructions more-or-less one at a time, instructions must be prioritized. For example, if you are playing a note while pitch-bending, it seems logical that producing the note itself would take priority over bending the pitch of the note; otherwise notes may be produced somewhat sluggishly.]

Most manufacturers place a relatively low priority on the instructions to update an LFO; after all, in most cases it's more im-

portant that notes sound on time than that their LFOs are sweeping at precise rates. However, you've discovered the one case in which this isn't really the way you want things prioritized. Unfortunately, it's just a fact of life with certain machines (particularly older instruments which use slower processors than do modern machines).]

T.H.

I recently purchased a TS-12 and am very satisfied with the instrument. It is quite a set-up for me. My prior keyboard workstation was the Roland JW50, which has limited effects processing and no capability for adding sounds.

I have just two comments about my TS-12. It has a limited number of guitars – especially for a person like myself who specializes in dance-rock music. To expand my guitar sounds, I am purchasing about seven more guitar sounds from Midimark Productions.

The one problem I have not solved yet is obtaining more sound effects. Ensoniq FXs are definitely limited and unsatisfactory. I need many basic sounds: thunder, wind, lightning, waterfalls, rain, explosions, streams, metal clanking, smashing, snaps & whips, etc.

Do you have a source for the above sounds?

Purvis Huggiws,  
Kennewick, WA

[CS – Have you checked into sound effects (and guitar sounds, for that matter) on EPS/EPS-16+/ASR-10 disk? There are quite a few sound effects contained in the Ensoniq 27th Dimension Holophonic Sound Library, which can be purchased separately as well as on Ensoniq's CDR-1 CD-ROM disk. In addition, there are third-party offerings of sound effects libraries and other sounds; Sam Mims' company, Syntaur, comes immediately to mind.]

[Ensoniq – To expand your selection of guitar sounds you have two possibilities – new synthesized sounds or using sampled sound disks. From Ensoniq we offer new guitar patches on TSD-1000 (LIKE-FLOYD AND PAD-GUITAR), TSD-1003 (BACKWARDS, CLASSIC-GTR, EL-DISTORTO, STRANGE GUITAR, VINTAGE-GTR, WL-WA-GITRS) and TSD-1004 (DR-Q-GUITAR). For sampled guitar sounds we have many choices in SL-15, 17, ESS-4, 10 and on CDR-2 and 3. To help you search through our sound collections we offer databases of

sounds organized by library or by sound type for all of our products. Call 1-800-553-5151 to ask for this free information.

As far as sound effects go, playing samples of actual sound effects will be far more satisfying (and realistic) than imitative synthesis will be. That is why we have not emphasized that type of synth programming – we have sound effects in SLT-9 and 10, and many third-party companies offer them as well. That's the advantage of having both onboard synthesis and sample RAM in your TS.]

Dear Transoniq Hacker,

Last autumn I bought an ASR-10 keyboard from a music shop in England and then brought it over to Ireland where I live. I have found that support for Ensoniq instruments in Ireland is non-existent, as is their presence in shops here. That's why I bought the ASR-10 in England where they sell Ensoniq gear and have some level of support. But I would like to know more about my sampler – which is where *Transoniq Hacker* comes in.

I would like to ask a few questions: 1) I would like to have a SCSI interface installed in my ASR-10 in order to use a CD-ROM drive to load samples from CD-ROMs. But the trouble is I only know of seven CD-ROMs available for my ASR-10. The CD-ROMs are CDR-1 from Ensoniq, P. Erskine Living Drums by Sampleheads (USA), Heavy Hitters from Q-Up Arts (USA), Steve Reid's Percussion by Eye & I (USA), Killer Horns and Classical Choir by Best Service (Germany), and P.T.O. Will Lee Bass Library by Sampleheads (USA). The last six are available here from the British sample CD company, Time & Space. Could you please give me details of any other CD-ROMs for my ASR-10? (Which leads me to my next question...)

2) Many different sampler manufactures have samplers that can load Akai samples (e.g. Roland S760, Emu E111X, Kurzweil K2000). Would there be a similar facility in the future for my ASR-10?

3) Would it be possible (again, in the future) to upgrade the RAM in the ASR-10 to more than 16 MB – say, 32 MB?

4) I never seem to be satisfied, do I? But could you tell me about the new 2-track hard disk recording feature on Version 2.0, and is 4-tracks in the cards?



5) Finally, have you a 24-hour FAX number so I could send a FAX of any other questions I might have?

Thank you,  
Yours ensoniqly,  
Michael O'Sullivan,  
Kerry, Ireland

[Ensoniq - 1) Our collection of CD-ROMs is larger than your list - we also offer CDR-2, which contains all the sounds from the EPS-16 PLUS (SL-1 through 20, ESS-13 through 20, and other selected sounds) and CDR-3 (ASR-10 essential disks, AS-1 through 5 and a great collection of large memory sounds). We are finishing development of a collection of CD-ROMs produced for us by third-party companies such as Sonic Arts, Hollywood Edge, Sounds Good, InVision and others, and they will be available in the fall. Stay tuned for more information shortly.

We also did not know that the Sampleheads titles or the Heavy Hitters (Q-Up Arts) were available in our format. You might want to check that information again. But Q-Up Arts does have 3 disks in our format currently, GreytSounds has one disk, Pro-Rec has a disk, and Rubber Chicken is working on one. We just spoke to East/West and they intend to intensify their support for our products as well. You should see more titles appearing in the near future.

2) We are not against having such a facility in the future - we recognize the value and importance of this feature. But what you should realize is that many of those samplers don't offer the extensive and expressive voice architecture that our samplers do. This means that sounds developed for them can't take advantage of our features like on-board effects, patch select programming, key-up triggering and many other parameters. So sounds developed in "native mode" on an ASR-10 will likely play better and be more expressive and complete. Compatibility with other formats would be nice, but not as good as sounds developed to take full advantage of our architecture.

3) No, 16 MB is the maximum the ASR-10 can support.

4) Space here doesn't permit a detailed explanation of Version 2. Our distributor in England, Sound Technology, has plenty of information for you. Contact them at: 44-46-248-0000. Thanks for your interest.]

Dear Hacker,

I enjoy your magazine in general and respect Ensoniq products - I own three EPS-16+ units, believe it or not.

But I can't sit still for Sam Mims' recent review of Ensoniq's orchestral string library. He is simply off the wall in his excessive praise of this package, and I'm sure I'm speaking for a fair number of folks who have purchased it.

Ensoniq trumpeted this library with a load of hoopla about the fact that it was produced by, in Mims' words, the "legendary" Phil Ramone. Mims gushingly pronounces it "definitive." I beg to differ.

The pizzicato, spiccato, marcato, tremelo and effects sounds for all four string sections are good. However, the main patches for all four, what Ensoniq calls "XPRSV," leave much to be desired. In particular, the XPRSV violin and viola sections are downright awful - totally lacking in true string warmth and character, the feel of a bowed section, attractive tonal characteristics. I NEVER USE THEM. You can get far better legato string sounds from any number of far cheaper synthesizers. My disappointment in these sounds could not be overstated.

The XPRSV cellos and basses are better, though still woefully short on authenticity. These sounds are usable, but only in combination with other cello and bass sounds from someone who really knows how to sample acoustic instruments. For instance, Keith Thomas, whose stuff makes Ensoniq look sick in comparison.

I'd like to know who Ensoniq thinks it's kidding with this package, and the embarrassingly hyped language that accompanies it. I doubt that the esteemed Ramone would think for a second of using it on any of his records. For another point of comparison, try matching Ensoniq's "Classic Flute" from their SL-9 package against Keith Thomas' equivalent, simply called "Flute." In automobile terms, this is like comparing a Yugo to a Mercedes.

What truly puzzles me is that Ensoniq has produced many outstanding sounds. Why are these so mediocre and even crummy? And why do you let Mims get away with this sort of thing? I'm sure his review will prompt some people to invest in this package.

Sincerely,

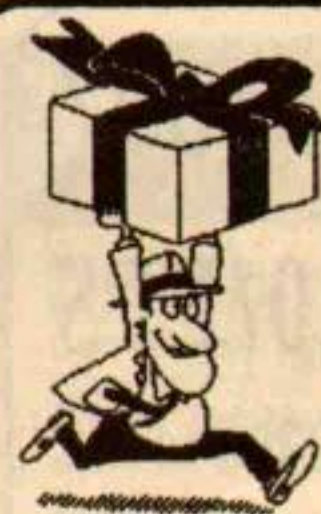
Mark Abel  
Richmond, CA

[Sam Mims responds - I hope my review does prompt some people to buy these string samples; I think they are of excellent quality, and hard to beat at \$8 per disk. I doubt the esteemed Ramone would have let the tapes leave the studio if he thought they were not up to snuff. And while Ensoniq took it from there with the programming, I think they did a fine job.

While such calls are certainly subjective, I'm hard-pressed to imagine how you would find these "downright awful." I find them quite expressive and convincing.

Readers should always keep in mind that they are only getting one person's subjective opinion from any review. Hopefully, the reviewer is qualified to make such judgment calls. As a professional sound designer, with years of experience playing in orchestras, I don't feel that I've led readers astray.]

[Ensoniq - We're sorry that you don't care for the XPRSV versions of the string sec-



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tions, or the SL-9 flutes. Sound is too subjective an issue to argue about – what's important is that you found sounds that satisfy your tastes from Keith Thomas. Kudos to him for his development, and we hope you enjoy making music with them.

What we do take issue with is your claim that Mr. Ramone would not use these sounds. Phil Ramone is the consummate professional – he would never allow his name and skills to be used for any project that he does not personally believe in. He took part in the whole process of developing these libraries, is proud to be associated with them, and takes an ASR-10 with those samples on most of his recording dates. We even had to fly an employee up to Boston to deliver copies of the collection to him for a live broadcast with Liza Minelli when he found he forgot his. You don't have to like the collection, but why accuse Mr. Ramone of not believing in the project? He is pleased with the outcome and has offered to work with us again on any project that we offer.

Remember the masthead of the Interface – about the vitriol?]

## Treat Yourself!!

### ASR-10/TS-10/EPS

Samples from K. Thomas

Electronic Musician says —  
"Sound Quality: 5 out of 5  
Value: 5 out of 5"  
[EM, Jan. '92]

Keyboard Magazine says —  
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[Jim Aikin, Keyboard, Oct. '91]

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## K. Thomas

PO Box 23056  
Stratford, ONT N5A-7V8  
Canada  
Phone: 519-271-7964  
or 519-273-7812

Dear Hacker,

First of all I must thank you for your very valuable newsletter. It has more than once served to a) open doorways of understanding and b) let me know that I am not alone in my trials and frustrations of mysterious Error Reboots?'s which seem to appear out of nowhere. Though scientific-minded about computer equipment (garbage in – garbage out as they say) I am at times tempted to resort to more "primitive" thinking when such error messages or system lockups occur (oh, I know it's because my *vibe* is negative that this happened, 'cause it didn't do that before!).

I am the very happy (mostly) owner of an ASR-10 with 10 megs RAM and recently got a Bernoulli 150 which ahs made my life infinitely easier and solved mysterious problems with the floppy drive which would delete a file and then get locked up saving the new one (even after a new "updated" floppy drive was installed.) Many thanks to Gary Giebler who unerased a file for me and then spent 45 minutes on the phone one Saturday afternoon helping me to get a song back which otherwise would have meant one month's work lost.

My situation is this: I have found that version 2.0 is wonderful for song tracks, but only once I get the sequences in place using system 1.61. Something about the new OS uses a different method of cueing up and locating that gets completely fouled up when I am first constructing a song. Typically, I will create a sequence, change its length, add new measures, copy it, change the copy, etc. and this drives the 2.0 system nuts. Error messages galore – #129, #130, #215, #005. It spontaneously started to renumber measures in the the middle of a sequence to number one. I even inadvertently created a sequence which, when loaded, causes not only the ASR to freeze, but the command line to completely disappear. I was not using Audio Tracks and had, in fact, turned them off before I even began the process that fateful day. I talked to Steve Pretti at Ensoniq who asked me to send them in a copy of "sequence from hell" which I did in April and have heard no response. Called again in May and still no response. I appeal to the Hacker to help me and hopefully get this resolved (before my warranty expires in August!) Does anyone else have this problem? Actually as long as I use 1.61 for sequencing and 2.0 for wavesample editing and audio tracks, I'm mostly okay.

Also I, too, have had the experience of having an entire instrument deleted when a sample has been deleted. Actually the instrument is still there as a shell, but all its wave-samples have been deleted. This happens to me usually when adding another sample to an already existing instrument and then later deleting it.

With both operating systems I occasionally have the problem that a sequence will be small in size, no more than 10 blocks or so, but the ASR will see it as, like 862 blocks, and save it as such. This always occurs in a Song, so I have to erase the Song (along with its tracks) and rebuild the song with its component sequences. I now only use the Song tracks for mixing information, meaning I sometimes have to re-mix the song all over again when I lose the song tracks. What causes this?

There was one person who wrote in a while ago complaining that when he sometimes pushed an arrow key, The ASR would cycle through the screen at top speed. I had a similar prob at first. I think it is due to the metal cover not fitting quite right on the button and jamming it down at times. Simply working the button well (with the ASR off) did the trick.

That's it for now. Thanks so much for your time and effort.

Sincerely,  
Stephen David Hewitt  
West Los Angeles, California

[CS – First of all, Ensoniq has just released OS 2.07 for the ASR-10. If you don't have a copy, get a hold of it (it's free to registered users), and see if that doesn't alleviate your problems. I'd also suggest contacting Ensoniq Customer Service (215-647-3930) directly; you seem to have enough wackiness going on that I think it might be a good idea to talk to them.]

[Ensoniq – You should definitely use O.S. 2.07 or the newly released 2.5. They should fix all of your problems.

Note: Mr. Hewitt talks of speaking with Steve Pretti up until May, with no final response. Since that time he had gotten a call back, and his data helped us in fixing the bug for the 2.07 release. Since that time he has continued to provide us with more help and we would like to thank him for working with us to make the ASR-10 O.S. even better.]

Dear TH,

This month I have a couple of questions about wave samples and effects on the EPS-16+.

1. How can I extract individual wavesamples from within an instrument? Say I want to take specific wavesamples from different drum kits and make a disk of just snares, kicks or hi-hats making each wavesample into an individual instrument.

2. When making a sequence of multiple tracks how can I assign each track its own effect?

3. How can I create a drum roll or flam effect using the loopstart, loopend, and loop position functions? I tried to but only got a weird feedback sound.

Thank you and keep up the good work.

Yours truly,  
D. Brown  
Oakland, California

[CS - 1) Detailing the process for creating custom drumkits is a bit beyond the range of this column; suffice it to say that one approach involves loading the kit(s) which you are using for source material, creating a new instrument in an empty location in the ASR-10, creating a new layer (or layers) in the new instrument, then copying wavesamples from the source instruments to the newly created destination instrument (you'll also probably need to re-assign pitch ranges for some or all of the copied samples, and possibly re-tune some or all of them as well).

However, I believe that Ensoniq has detailed information on how to do just this in the form of an applications note, or some such, which may be available for the asking. Too, this information is detailed in a number of the sound manuals that are included with Ensoniq percussion sound libraries, as well as any of the CDR CD-ROM manuals.

2) I'm afraid you can't assign separate effects to each track in a sequence; the effects processor onboard produces a single effect algorithm at a time. Many of these algorithms, however, provide multiple effects (such as the CHOR+REV+DDL effect). By assigning instruments on different tracks to different effect busses, you can process the different instruments through different effects contained within the algorithm. For ex-

ample, assigning an instrument to Bus 1 in the CHOR+REV+DDL effect will process the instrument through the chorus and reverb portions of the algorithm; assigning the instrument to Bus 2 will process it through the reverb alone; and assigning it to Bus 3 will process it through the digital delay effect.

3) Looping a drum sound will allow you to create drum-roll-like effects, but creating flam effects is probably best done another way (which I'll explain in a moment).

To get a handle on looping drums to create rolls, first select the wavesample you wish to loop. Set the wavesample mode (press "Edit," then "Wave," then scroll to "MODE=XXXX") to "LOOP FORWARD." Scroll to the LOOPSTART page, and set the coarse adjust parameter to "(00)." Next, scroll to the LOOPEND page, and set its coarse adjust parameter to "(99)." Now you've looped the entire sample - the loop plays through the entire sound on each repeat, rather than just a portion of the sound. This may be the sound you want, but I'd suggest experimenting with changes to the LOOPSTART and LOOPEND parameters. As you move the LOOPSTART parameter later in the sample (increase the parameter value), you'll begin to truncate the attack of the sound, which should have a bit of a softening effect on the "roll" portion of the sample. As you move the LOOPEND parameter earlier (decrease the value), you'll begin truncating the end of the sample, making for a "tighter" sounding roll.

For flam effects, I'd recommend taking the sample you want to "flam," copying it to a new layer, and layering the copy with the original sample, but slightly delayed. You can use the layer delay function (press "Edit," then "Layer," then scroll to "DELAY=X," and adjust to taste. You may find you have some unwanted phase cancellation effects (particularly if you are using small delay amounts), but you can probably correct for these easily enough using the AMP envelope (and/or wavesample end point parameter) to shorten the first drum hit enough so that it becomes just an attack, and doesn't continue to decay while the second (delayed) sample is sounding.]

Hey Hacker!

Some questions and input from just down the road in Eugene. It's my first letter to the Hacker, but probably not the last. For the readers who live in "electronic podunk"

towns like me, it's great to have a resource like you around.

I've had my ASR-10 for about a year now, and love it, but I've far surpassed the knowledge my dealer has about this instrument - and it gets to be frustrating solving problems by oneself all the time. (Any ASR owners listening in Eugene, I'd love to talk to you.) The TH has given me another option for information and your "Interface on a disk" will really help reduce the search time in finding answers to problems. It's too expensive to be always calling Ensoniq (how about an 800#?!). But, now for the questions:

My ASR is connected to a 500 M Microtech hard drive (works great, excellent value, good company) which I just purchased. Adding SCSI is a whole new realm to play in, but leads to my questions. I run Cakewalk for Windows and am trying to write a sys-ex command (actually, "virtual button presses") so that each song will load its own instrument/bank when the song is loaded. (Cakewalk can do this automatically when a file is opened.) This seemed like the answer to my dreams until I found the glitch. The

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Load/System-MIDI button press, to get you into the hard drive's directory, will always take you to the last place you were on the menu. Since this location changes with each instrument/bank that is loaded with the virtual button press, you must write commands to get you back to the starting point (a lot of work) so you're at the right point to load the next instrument/bank. When opening multiple songs (like in a performance) you'll never know where you left off, and therefore the virtual button presses will take you to places you don't want to be, and load instruments you don't want loaded. Soooo... my question is: Is there any command which will automatically take you back to the root directory? Any information to further explain how to use external commands with the ASR would be great.

The 44Hz effects included on the Version 2.01 Master disk are EXCELLENT. The question I have is how do I save them to my hard drive so that I don't always have to "change storage device" to load new ones. I've yet to figure this one out.

Lastly, when recording on Disktracks to my hard drive (yeah, yeah, I know, it's not

recommended because of fragmentation, no back up, etc.) some wild stuff happens. Like my voice being replaced by instruments (really weird) and a loop developing in the track that's not supposed to be there. Is this specific to hard drive recording, or a problem with the operating system?

More articles on the ASR!! And thanks for your help!

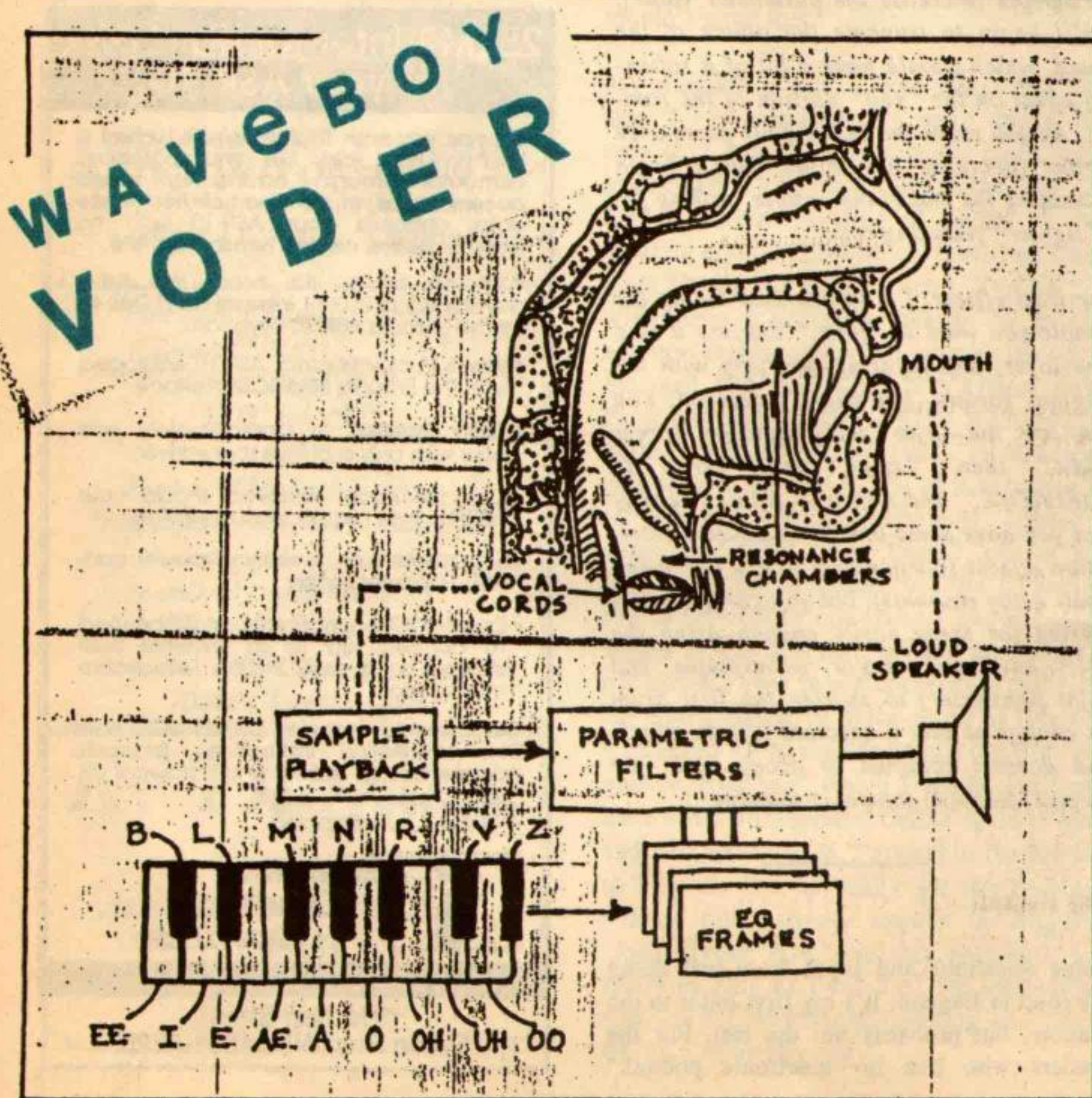
Mike Gelardi  
Eugene, OR

[CS - When navigating your hard drive (or other SCSI storage device) via MIDI commands, remember that sending the ASR a program change of 0 will move you back out of whatever directory you are currently in, and up the file path towards the root level of the directory. Therefore, if you are not sure where you are currently located on your hard drive, simply send a string of program changes, all with a value of 0; if you send enough 0 program changes, you'll eventually reach the root level of the directory.

Another idea you might find useful - using macros to navigate. You can create macros

to take you to specific locations on your hard drive (see your SCSI owner's manual for more information), and use program change messages to invoke whichever macro you need. You can define up to 28 macros (1 through 28 - macro 0 is always defined to take you back to the location of the macro file itself). Sending program changes 101 - 128 (or 100 - 127, depending on how your sequencer numbers program changes) will invoke macros 1 - 28. Once you used a macro to enter a particular directory, it's an easy enough thing to send the program change corresponding to the file you wish to load.

You can transfer effect files to your hard drive by loading the effect file from the floppy, changing the storage device to your hard drive (and selecting the directory you wish to save to), pressing "Command," then "Effects," and scrolling until you see "SAVE BANK EFFECT." Pressing "Enter" will then save the effect to whatever directory you've selected. If you want to save an Instrument effect, simply copy the effect to the bank (press "Command," then "Effects," scroll to "COPY CURRENT EFFECT," press "Enter," select "DIRECTION=COPY



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TO BANK"), and press "Enter" once again. The effect can now be saved to disk using the steps outlined above.

As far as your Disktracks problems go, check out OS 2.07, which (as I mentioned earlier) has just been released and is available free of charge to registered users. If this doesn't clear up your difficulties, I'd suggest contacting Ensoniq Customer Service (215-647-3930) directly.]

Greetings -

I am responding to Mr. Microtone's (Gary Morrison) comments (July 94) about my "Empire Brass" article (May 94). He finds fault with the term, "Pure temperament." "Pure temperament" connotes a scale tuning with intervals closer to "pure" than to "equal." The Webster's Unabridged Dictionary defines "Pure temperament" as tuning "in which the intervals are set exactly according to theory," as opposed to "Equal temperament, in which the pitch of the tones is slightly adjusted to make them suitable for all keys." In my article, I was not referring to an exact tuning of a particular brass instrument, simply the NON-equal tuning of brass instruments by nature.

Of interesting note, according to the New Harvard Dictionary of Music, "Just intonation" is defined as a scale with "any 5 or more acoustically pure intervals," implying that some intervals are not "pure." It is also stated in this book that, "It is not possible to construct a diatonic scale in which both fifths and thirds are pure." My point here is that any scale (even Just Intonation) contains non-pure "tempered" intervals, hence, every scale is a "compromise."

Thanks for your second point; yes, you do want to extrapolate the pitch table from C4 to C5 instead of C4 to B4, the B4 was a typo, sorry.

But I don't want to sound too critical here, just want to clear this up; and I'm all for "Tuning Inequality" in music.

Thanks,  
Jim Grote  
[74002,2341]

Dear Hacksters,

I bought a TS-10 a month ago and even though there was a problem with the MIDI-out system it was repaired and I was back on

my way. First let me say that I love this keyboard - the sounds, the sequencer, the hyperwaves as well as knowing that Ensoniq cares about its customers.

I am writing this letter because I just recently had a major bummer with the sys-ex dump feature. I own a Roland R-70 drum machine which I have been programming for the past 8 months. I was basically running out of memory and also wanted a backup, so I decided to do a sys-ex dump into the TS-10. I followed both machines' instructions and dumped it into the file. Everything was fine, the TS-10 was happy and accepted the dump and I named it as a file.

I then initialized the R-70 to make room for more juicy patterns. At this point I decided to dump the sys-ex file back into the TS-10 just to make sure it worked. Again I followed both machines' instructions and began sending the dump into the R-70. Everything was fine and the R-70 displayed "receiving dump" for about 15 seconds when all of a sudden it began to get upset saying "chk sum err (different numbers)." I tried dumping several times and it kept saying the same thing. At this point my drum patterns flashed before my teary eyes. I was really bummed. Had I really lost all the programming? I called Roland and the technician and I went through the whole process again - it did the same thing. Then he told me that it might be because the TS-10's OS was not DOS based and that it was an incompatibility problem. He went on to say that most manufacturers of MIDI equipment were using DOS because of problems with incompatibility.

I then called my Ensoniq dealer and sure enough he informed me that Ensoniq had its own OS. Bummer! I went back to the TS-10 manual to reread the section on sys-ex. Under "generic" sys-ex storage it says, "Here are a few examples of the kinds of information which you can use the TS-10 to store in this way: the pattern memory of a drum machine." It does not say "some" drum machines - there is a major difference. If it had said that I would have researched the matter more thoroughly. Where's the beef??

I also have a suggestion that I think would help speed up programming. For entering numbers you have to use either the slider or the arrow buttons. When I use the slider I always overshoot the number I want then I have to go back and use the arrow keys. This is tedious. Why not have the option of entering the number directly with 10 numbers from the bank select? I mean they are al-

ready there. So if you want to enter 73 for an envelope, just press 73 instead of sliding all over the place.

One last thing - why do you get 120 sounds on the TSD series for \$19.99 and every other disk offers less sounds for more money? The TSD series sounds are great, diverse, and are a major bang for da buck. More TSDs please.

Also more info on hyperwaves - examples, tips, etc. It is sorely lacking.

Keep hacking,  
Andrew Berends  
Chester, Vermont

[CS - It sounds to me like you're getting some flaky advice. "DOS" stands for Disk Operating System; the way in which the TS-10 (or any device, for that matter) communicates with its disk drive has no bearing on how it will handle MIDI SysEx dumps to and from external devices.]

There can be some fairly tweaky issues involved in transferring SysEx data; I'd suggest contacting Ensoniq Customer Service (215-647-3930); they may be able to help get you on track.]

[Ensoniq - You are certainly getting some misguided advice. The Operating systems and disk formats of the TS and your R-70 have nothing to do with transferring MIDI System Exclusive information. The TS SysEx recorder simply takes in the incoming MIDI SysEx data and stores it. When you transmit the SysEx data back to the target device, the TS sends back exactly what it got. The only issue that could be a factor in this working or not is if the R-70 requires some timing delays between packets, or handshaking when sending each individual packet. This means that the sending device would have to tell the R-70 "I'm going to send a packet of data now" and the R-70 would respond "OK I'm ready to receive that packet," and so on for each packet sent. We don't know if that is the case, but that is the only likely problem that could occur. Perhaps another call to Roland to ask that more specific question is in order.]

Dear Hacker,

I am currently working on an EPS File editor for the PC Computer, which is nearly finished. I would like to include a utility to load up Akai samples and convert them to EPS format, but I heard from an unofficial

source that Ensoniq is planning to provide this feature on a future OS upgrade.

Could you try and find out and save me a lot of hard work? Neither do I have the Akai file format so if any there are any readers out there who do, perhaps they could send me details.

Thanks,  
Jon Hopkins  
41 Birnam Road  
Wallasey, Wirral, England, L44 9AY  
s4jwh@csc.liv.ac.uk

[TH - No news here. Readers?]

#### Ethereal Pop Responds!

In regard to a review of our sound library and disk organizer in last month's issue (#109), let me start off by thanking Steve Vincent for his efforts - over 200 instruments on 50 disks is a lot of listening. However, we would like to correct a few inaccuracies in this review.

1) The repeating patterns in many of the loops. Many of the analog sounds that we

sampled have these textures of repeating patterns. These are not bad loops, it is exactly what we set out to capture. By doing a bi-directional cross-fade, we were able to create a smooth loop yet keep the movement of the original sound, particularly in the Oberheim Xpander samples. These are some of our favorite sounds, and match the original patches that we sampled.

2) Empty disk space. As we were putting the library together it was our intention to group the sounds by the type of keyboard that was sampled. We would take all the mini moog samples and arrange them on the disks to fill the majority of disk space, but because of the varying size of the instruments, it was not always possible to fill every disk and keep all the instruments in sets.

3) With the cost of our 50-disk library being only \$150, we are offering a very good value, and, contrary to Steve's opinion, there is not a lot of editing needed to enjoy these sounds. Also, the comment that many are panned all the way to the right - this is simply not true! Maybe this has something to do with that hearing loss Steve hinted about: ).

With regard to our disk organizer, the problems he had loading the program were due to splitting the program onto DD 5.25 disks for his XT. This was not a supported setup - but it is now. We have fixed the bugs and are working on Version 2.0. We do include a read-only version of the program with any order to help users navigate our library.

We agree that all good reviews point out the positive in addition to giving constructive criticism. This helps companies find ways to improve their products. However, reviews can be subjective, and sometimes do not reflect the needs or wants of customers. We have sold many sets locally after getting musicians to hear and experiment with the sounds. The purpose of our library is to give users a lot of good, clean instruments from a wide variety of keyboards, and to capture the sonic qualities of each.

We feel confident that the value is reflected in the quality and the quantity of the instruments.

Ethereal Pop  
Houston, TX

[Steve Vincent responds -

*We sound reviewers struggle with how (and whether) to communicate our subjective impressions of sounds, especially if those impressions are not completely positive. This is why I stated that "sound reviews are highly subjective," and proceeded to list seven criteria I use for evaluating samples. I always audition sounds before I buy, either in the store or the vendor's demo, and I encourage others to do the same.*

*Regarding the panning, I stand by my review: many sounds were panned all the way right. Must just be a fluke with the set I reviewed.*

*One last nitpick: The problem I had loading the Disk Organizer program happened on a 486 Windows machine, before I split the program onto two disks for my XT. But so what - Ethereal Pop was very responsive, and overnight expressed me another disk. Kudos for that!*

*Due to editing, my review unfortunately ended with the words "not much bang for the buck." This comment obviously referred specifically to the Organizer, not the sample set. Ethereal Pop's sounds are the lowest priced samples I've ever had my hands on - there is plenty of bang for the buck!*

## Transoniq-Net

### HELP WITH QUESTIONS

All of the individuals listed below are volunteers! Please take that into consideration when calling. If you get a recording and leave a message, let 'em know if it's okay to call back collect (this will greatly increase your chances of getting a return call).

All Ensoniq Gear - Ensoniq Customer Service. 9:30 am to noon, 1:15 pm to 6:30 pm EST Monday to Friday. 610-647-3930.

All Ensoniq Gear - Electric Factory (Ensoniq's Australia distributor). Business hours - Victoria. (03) 480-5988.

SD-1 Questions - Philip Magnotta, 401-467-4357, 4 pm - 12:30 EST.

VFX Sound Programming Questions - Dara Jones, Compuserve: 71055,1113 or Internet: ddjones@net.com.com or call 214-361-0829.

SD-1, DP/4, ASR-10 Questions - John Cox, 609-888-5519, (NJ) 5pm - 8 pm EST weekdays. Any time weekends.

SQ-80 Questions - Robert Romano, 607-533-7878. Any ol' time.

Hard Drives & Drive Systems, Studios, & Computers - Rob Feiner, Cinetunes. 914-963-5818. 11am-3pm EST. Compuserve: 71024,1255.

EPS, EPS-16 PLUS, & ASR-10 Questions - Garth Hjelte. Rubber Chicken Software. Call anytime. If message, 24-hour callback. (305) 792-9231. Compuserve: 72203,2303.

ESQ-1 AND SQ-80 Questions - Tom McCaffrey. ESQUPA. 215-830-0241, before 11 pm Eastern Time.

EPS/MIRAGE/ESQ/SQ-80 M.U.G. 24-Hour Hotline - 212-465-3430. Leave name, number, address. 24-hr Callback.

Sampling & Moving Samples - Jack Loesch, (908) 264-3512. Eastern Time (N.J.). Call after 6:00 pm.

MIDI Users - Eric Baragar, Canadian MIDI Users Group, (613) 392-6296 during business hours, Eastern Time (Toronto, ONT) or call MIDILINE BBS at (613) 966-6823 24 hours.

SQ-1, KS-32, SD-1, SCSI & hard drive Questions - Pat Finnigan, 317-462-8446. 8:00 am to 10:00 pm EST.

ESQ-1, MIDI & Computers - Joe Slater, (404) 925-7929. EST.

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