Transoniq Hacker

The Independent News Magazine for Ensoniq Users

Resonant Filters for the EPS

Craig Anderton

For: EPS-16 Plus, ASR-10.
Product: Resonant Filter Disk 1.0 (V1.2 reviewed).
Price: $39.95.
From: Waveboy Industries, PO Box 233, Paoli, PA 19301, (215) 251-9562.

The story so far: Waveboy's Parallel Effects Disk contains new effects algorithms, loadable from disk, that let you patch the EPS-16 Plus or ASR-10 internal effects in parallel. Their second product, the Audio In Effects disk, can route audio outputs through the sampling audio input jack — essentially turning your sampler into a variation on the DP/4 signal processing theme. Both cost $39.95, and received glowing reviews in the Hacker by Yours Truly. My opinion about them has not changed over time: Each one is still one of the biggest bargains around for multiplying the power of your instrument.

So now Waveboy has finally done what you've always wanted to do with your Ensoniq filters — make them resonant. It does this by offering a disk-loadable effects algorithm that creates a 4-pole filter with resonance. But that's not all the algorithm does; there's also a fast ADSR envelope generator, sample-and-hold modulation source ("In memory of my dear old Odyssey and Avatar," as noted in the manual), and effects.

A second algorithm allows for 1-op FM synthesis with effects. FM+FX makes some wonderful clangorous sounds but does not compare with even the simplest FM synthesizer in terms of sophistication. Nonetheless, there's a sort of "avant-primitive" feel that's perfect for industrial-strength music.

Having all this on disk and ready to load was clearly designed to make people like me salivate with anticipation, so now the big question is how well it meets expectations.

What It Is

The package includes a CD-insert sized manual (20 pages) and a single EPS floppy disk containing 4 files. In addition to the two effects algorithms described earlier, there are two instrument files. Rez Minimoog includes five minimoog waveforms (one on each layer), and three waves dropped an octave on the remain-

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ing layers. You can run these through the resonant filter for a sort of "Minimoog Construction Set." (If you want some Minimoog white noise to go along with it, this is probably a good time to plug my Ensoniq Signature Series Disks, Vol. 1, which has some looped Minimoog white noise samples along with other Minimoog curios.)

DX-16 PLUS uses sine waves to create typical FM sounds. It's very velocity sensitive, which can be used to advantage. Sequencing allows for tight control over velocity values during the editing process, so you can create extremely complex-sounding lead lines with a wide timbral range.

Getting Started

It's simple to get started: Boot the sampler, load the instrument you want (Minimoog and/or FM), and go.

Editing is as expected. You scroll through the editable effects parameters, and mutate sounds as you go along. What is not expected are the envelope times — they're in actual seconds, instead of EATUs (Ensoniq Arbitrary Time Units). When are all manufacturers — I'm not just singling out Ensoniq — going to give calibration in standardized units (time, frequency, etc.)?

What you might also not expect (unless you've read previous reviews) is that if you scroll to the end of the effects parameters, you'll find Waveboy's address, phone number, and copyright notice.

Inside the Algorithms

Rez filter algorithm effects parameters are: filter frequency and resonance; filter envelope attack, decay, sustain, and release; amount of envelope and keyboard modulation; trigger mode (single, where you have to lift your fingers off the keys to retrigger the envelope, or multi, where each new keypress triggers an envelope); filter modulation type and amount, with 12 possible sources including off and sample-and-hold; sample-and-hold time; filter level and pan; and individual sends to the chorus/delay and reverb.

The chorus/delay is a two-tap delay line with variable speed LFO. The first tap includes level, pan, delay, feedback, and LFO depth. The second tap lacks the feedback parameter. The delay for each tap ranges from 0 ms to 1500 ms.

The reverb offers volume, pan, predelay, room size, decay time, diffusion, and high frequency damping. The dry signal paths for both the reverb and chorus/delay include level and pan controls.

FM algorithm parameters are: FM modulation index; chorus with rate, depth, delay, volume, and pan; and reverb with the same parameters as the rez filter reverb. However, note that the FM algorithm derives both carrier and modulator signals from bus 1 (panning a signal to -99 sends it to the carrier, and panning to +99 routes it to the modulator), so bus 2 is free. I guess Waveboy had some processing power left to mess around with, because they threw in a chorus/delay and reverb (with the same parameters as the rez filter) for bus 2 signals.

Applications and Gotchas

The resonant filter algorithm doesn't turn your sampler into a Minimoog, but it sure comes close. Having just finished a Minimoog emulation disk for a different keyboard, I'm tuned in to that particular sound right now — and the rez filter is very good.

The only real limitation becomes apparent when you put the algorithm on your own signals: the filter is global, so you can't have individual filter articulation on each note. The multiple trigger option helps give the "look and feel" of polyphonic filtering, but it's not entirely convincing. In some cases, this is an advantage; many older instruments had this type of filter response, and I know of no way to recreate this vintage sound with modern gear other than by using the Waveboy disk.

The FM synth algorithm is limited; you won't get DX7 imitation Fender Rhodes sounds (now that I think about it, that's kind of a comforting thought). Also, it works best monophonically if you want clean sounds; polyphonically the sampler sounds like it's going through a fuzztone. As guitarists will tell you, that means you can get away with playing octaves, fourths, and fifths, but other intervals can get pretty dirty. Making value judgements about these sounds is risky — I loved some of the distorted, gritty effects — so let's just say that the more you like techno and industrial, the more you'll like this algorithm.

As you might expect, the emphasis is on the filter and FM parts of the algorithms, so the Waveboy reverbs aren't going to make Lexicon quake in fear. But they sure are useful, as are the chorus and delay.

Back to the Future

What's interesting here is that Waveboy has gone very "cutting edge" with this release, keying right into the analog synth revival/industrial music confluence. For this reason, it may turn out to be their most successful disk to date — and it should be, because I know of no other way you can get two popular vintage synths effects for $40.

All in all, I'm delighted with Waveboy's latest offering. As with the previous two disks, it's hip, inexpensive, clever, and useful. What more do you want for that price?

P.S. I'd sure like to see a graphic or parametric EQ next.

Bio: Craig Anderton is a musician (ten recordings), author (eleven books), and lecturer. In addition to his duties as Editor-at-Large for Guitar Player *and West Coast Editor fo* EQ, *he seems to be turning into the* Hacker's *"designated reviewer" for Waveboy disks.*

Front Panel

RND (♪♫♪)

Ensoniq News

We are pleased to announce that starting in July all SQ-1 PLUS 32 Voice, SQ-2 32 Voice and KS-32 keyboards will be coming with *Talking Owner's Manuals'* cassettes free in the box. You have read about these helpful tutorials here in the *Hacker*, and they will now be included for free!

A SCSI option will be available for the TS-10 Performance/Composition Synthesizer starting in July. The SP-4 interface will allow read-only access to the growing library of CD-ROMs for the ASR-10/EPS-16 PLUS and will allow TS-10 owners who may also have an Ensoniq sampler with a hard drive instant access to their already compiled libraries. The SP-4 will cost $249.95 including installation, and is available from any Ensoniq Authorized Repair Station.

Third Party News

We'd like to welcome Ruff Beat Productions (Sample CDs) and Anthony Ferrara (Music!) to our Hacker family of advertisers. Check out their wares in the Booteeq.

The Austrian Sound Library got a very favorable review in Issue #95 — just about the same time that their phone number changed. If you've been trying to reach them, try: (Austria) 1-876 37 74.

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. 215-647-3930.

All Ensoniq Gear – Electric Factory (Ensoniq's Australia distributor). Business hours – Victoria. (03) 4805988.

Sampling – The International Samplers Cooperative, 310-455-2653 or via MusoBBS, 818-884-6799.

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

VFX Sound Programming Questions – Dara Jones, Compuserve: 71055,1113 or Midi-net and Fido-net. The local BBS is the Nightfly in Dallas: 214-342-2286.

SD-1 Questions – John Cox, 609-888-5519, (NJ) 6 – 8 pm EST.

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

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

EPS, EPS-16 PLUS, & ASR-10 Questions – Garth Hjelte. Rubber Chicken Software. Pacific Time (WA). Call anytime. If message, 24-hour callback. (206) 821-5054.

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

ESQ-1 Questions – Jim Johnson, (503) 684-0942. 8 am to 5 pm Pacific Time (OR).

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.

Mirage Sampling – Mark Wyar, (216) 323-1205. Eastern time zone (OH). Calls between 6 pm and 11 pm.

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

ESQ-1, MIDI & Computers – Joe Slater, (404) 925-7929. Eastern time zone.

Tested and Approved Hard Drives for the EPSs

The drives listed below are known to be compatible with the EPS and EPS-16 PLUS *at the time of testing*. Changes in firmware or hardware by drive manufacturers may make later versions incompatible (with the exception of **PS Systems**, **Ramtek (Eltekon)**, and **Frontera** whose drives are configured to work specifically with Ensoniq products). Drives *not* included on this list may also work just fine. For up-to-date information about specific drives call Ensoniq Customer Service: 215-647-3930.

MANUFACTURER	MODEL
Dynatek	All Models
Frontera	All Models
PS Systems	All Models
Ramtek (Eltekon)	All Models
Rodime	45plus, 60plus, 100plus, 140plus
Microtech	R45, N20, N40, N80, N100, N150
PL1	45 Meg Removable
Mass Micro	Datapack 45

Drives Reported to Work by Readers

The following drives have been reported to work satisfactorily with reader's EPS systems. No guarantees — but they'll *probably* work with yours. Try to try *before* you buy.

Jasmine Direct Drive 100	Quantum 100M, 210M
PowerDrive44	Seagate 80M
Syquest 555 (removable)	Tech Data Model 60e

Subscription Information

US: $23/year. All others: $32/year (please use International Money Order, payable in US funds). Please make payable and mail to:

Transoniq Hacker, 1402 SW Upland Dr., Portland, OR 97221

Rock Through MIDI

Jim Grote

For: VFXs, SDs, EPSs, ASRs, TS-10, SQ-80.
Product: ***Rock Through MIDI***, a collection of 67 rock patterns and licks sequences.
From: Terrence Lester, New Sound Music, P O Box 37363, Oak Park, MI 48237. Phone: (313) 355-3643.
Price: $49.95, manual included.

This package includes a disk of 67 sequences and a manual which includes notated music for each sequence. As stated in the manual, "Most of the sequences are renditions of popular rock patterns and licks as played by some of the top rock keyboard players such as Elton John, Stevie Wonder, Billy Joel, Bruce Hornsby, Little Richard, Jerry lee Lewis, etc." This product is available for several platforms such as Ensoniq, Korg, Yamaha, Roland, and computer sequencers.

Let me start this review by saying I originally loaded up this disk with a somewhat skeptical attitude toward preprogrammed rhythms and accompaniments. This negativity was fairly quickly modified when I realized that I was spending more time jamming than writing the article. What this means is that I ended having a lot of fun playing along with the sequences.

Overall, a wide variety of rock music is represented in this collection. There's a strong emphasis on the twelve-bar blues, offering several variations of this classic pattern. My favorite sequences were the ones influenced by the Doors, and the few bordering on fusion-jazz.

Each sequence is typically arranged in four, eight, or twelve bar phrases. They are essentially rhythm tracks you can improvise solos over. Some have a solo line on top of the rhythm tracks. These solos are notated in the manual, which is good for learning the part and experimenting with variations. The manual is well done, showing notated music for all examples. One area the manual is weak in is offering advice or discussion for beginners on how to improvise over the various styles. The music usually indicates the key the example is in, but often nothing else. Several sequences need simple riff ideas or even pentatonic scales to give a framework in which to improvise. Some examples name the song they are based on, so one could listen to that for ideas.

Now a bit about the quality of the sequences. The parts of each sequence are well executed, sounding as if they have been played by an actual human being. They're not mechanical sounding like programmed drum patterns often are. I do have a few complaints, though. I reviewed this product on my VFX-sd, so these complaints may not apply to other platforms. First of all, the mix of each sequence is inexplicable. The drums are loud and the piano and bass parts are quiet. The manual says that if this is the case, scale up the velocities of the quiet tracks. Applying a scale factor of about 1.5 to the velocity of the piano and bass tracks did help, but it's a pain to have to do this for several instruments in every sequence (there's 67, remember?). This should have been done before I bought the product. Also, the sounds selected for the tracks were probably not what I would have picked. But, then again, that's the beauty of sequencing — I could easily pop in my favorite sounds.

Conceptually speaking, this package is an excellent tool for beginners to learn the basics of rock keyboard playing and solo improvisation. The manual is clear and concise, making a good companion to the sequences. I would have liked to see a wider variety of examples, maybe some excerpts from Keith Emerson. Presumably, Terrence will fix little details such as track mix, etc. The bottom line is, like any musician, I couldn't help but enjoy jamming along with these fun rhythm tracks. ▬

Bio: Jim Grote has been programming and playing synthesizers for years. He is fascinated equally by both science and art, thinking and feeling, programming and unbridled jamming.

Put Your SQ/KS Patches on a Diet

Brian Rost

Admit it, the day you walked home with your SQ-1, SQ-2, SQ-R or KS-32 under your arm you were probably thinking how with 21- or 32-voice polyphony you'd never run out of voices or need another synth. Then Murphy's Law of Sequencing raised its ugly head: You can never have too many voices! That's right, you heard the one thing that all sequencer users dread, voice stealing! How could this be? You went back and looked over your composition and you were using nowhere near enough notes to use up all those voices...or were you?

The heart of the problem lies in the SQ/KS voicing architecture. With most synthesizers up to the first generation of digital machines, the concept of "voice" and "note" were pretty much the same. If we look at the old Ensoniq ESQ-1, we see that a voice consisted of three oscillators, three LFOs, four envelopes, four amplifiers and a filter. There were eight voices total, and we could play up to eight notes simultaneously. The SQ/KS architecture is a lot different. A voice consists of one oscillator, one LFO, one amplifier, three envelopes and two multi-mode filters. This seems a lot more limited than the ESQ-1 voice, but the SQ/KS allows us to layer up to three voices in a patch. Then you get three oscillators, three LFOs, nine envelopes, six filters and three amplifiers; we've gained considerable flexibility at the cost of polyphony. But when each note uses three voices, we are limited to only seven notes on a 21-voice machine and ten notes on a 32-voice machine.

This may seem to be no big improvement over the ESQ-1, but the fact is that many patches use less than three voices and the voice allocation algorithms used are very sophisticated, so the apparent polyphony is usually much greater. There are a number of techniques we can apply in order to maximize the number of simultaneous voices available for a sequence.

First, we can select patches which use only a single voice. Secondly, we can take advantage of the voice priority parameter to more efficiently allocate the voices amongst the patches we are using. Third, we can take advantage of glide modes to minimize voice usage for patches playing monophonic lines. Lastly, we can actually "slim down" your patches by modifying them to use less voices. We will look at each method in turn and see the pros and cons of each.

To start with, let's examine exactly how voices are allocated in the SQ/KS architecture. Every time we play a new note, the microprocessor at the heart of the synth must decide where to obtain the voices needed for that note. If we are playing only a few notes at a time, there will be a pool of "available" voices most of the time. Once we start approaching the voice limits, the processor may no longer have any voices available for a new note, so it must steal one or more voices. There are three main rules that the processor follows:

1. Voices can only be stolen if they are of equal or lower priority.

2. If a voice uses a sustaining waveform, it is released to the "available" pool once the amplitude envelope reaches zero.

3. If a voice uses a non-sustaining waveform, it is released to the "available" pool once the waveform has completed its cycle or when the amplitude envelope reaches zero, whichever comes first.

Let's look into the first option, using single voice patches wherever possible in a sequence. Luckily, there are plenty of useful patches that use only one voice. Some are obvious; Clarinet, Bassoon and French Horn in the ROM bank, for example. Punch up the WAVE page and we can see that each uses only one voice. Unlike older synthesizers, there is no need to layer voices to generate complex waveforms on the SQ/KS. Instead, high fidelity samples of these instruments are in the wavetables. Take a quick look through the ROM bank and you'll find quite a few single voice patches.

Some patches that use only a single voice are not so obvious, though. Let's look at two piano patches, Classic Piano (for owners of machines with Megapiano waves) and Grand Act (for owners of the original SQ-1 or SQ-R). Looking at the WAVE page for Classic Piano shows both Voice 1 and Voice 2 turned on, but Voice 1 uses the wave 16 BIT PIANO-HI, which extends only over the bottom octaves of the keyboard. Similarly, Voice 2 uses 16 BIT PIANO-LO, which covers only the upper octaves of the keyboard. This means that for any key we depress, only one voice is actually used. In fact, this patch is really a single voice patch, with different voices in each of two zones on the keyboard. Grand Act also uses only one voice at a time; this patch is separated into three zones across the keyboard, with each zone using one voice. Patches that make use of zones and velocity switching actually may only use one or two voices even though they are programmed with up to three voices as on.

Happily, drum kits also are single voice patches. Each kit has up to seventeen zones across the keyboard, where each zone is assigned only one voice. In addition, most drum sounds are of short duration (crash cymbals being an obvious exception), so the voices used up by the drums are quickly returned to the available pool.

It would be wonderful if we could always use single voice patches, but realistically we will seldom be able to use them for all the sounds we need for a sequence. So if we must use patches that require more voices, we can take advantage of the voice priority scheme to help out a bit. Call up Jazz Piano (on a Megapiano machine only) and go to the WAVE page. Voices 1 and 2 use the 16 bit piano waves in zones, like Classic Piano does, but Voice 3 adds the THUD waveform. Solo Voice 3 and listen to the patch. You'll find that THUD is only audible in the upper octaves and it adds the sound of the hammer mechanism to the patch. Since it is a percussive sound, the voice will be released once the waveform has cycled or the amplitude envelope has reached zero. We can change the voice priority from medium to low, in which case if a new voice is needed and Voice 3 is still sounding, it will be cut off. In a dense mix, this is likely not to be very audible. To see what this sounds like, try turning Voice 3 off and playing a few notes, then turn the voice back on and play some more. Yes, there is an audible difference, but in the context of a typical sequence if some of the notes lose the THUD sound, it's not going to be very noticeable. Other examples of patches that can use this approach of lowering voice priority for percussive voices are organs using one voice to provide key click, or patches with percussive attacks (bells, mallets) blending into sustained beds.

On the other hand, it may be necessary to raise the priority of voices in some patches. A good example is using a patch like String Section as a sustaining pad for a few bars. If some of the notes in the pad drop out suddenly, it sticks out like a sore thumb. We can raise the priority of the voices in the patch to high and the voices will not be stolen. Crash cymbals are also good candidates for high priority, since truncated cymbal samples sound pretty ugly. Use the high priority assignment sparingly! If all the patches use high priority voices, we have gained nothing over the situation where all voices are medium priority.

It's a good idea to not modify the voice priorities until we actually hear some voice stealing going on. This is because the nature of voice stealing will be highly dependent on the sequence being played. What works fine for one song may not work for another. Modify the voice priorities patch by patch until the voice stealing is no longer audible.

A common cause of voice stealing is busy lead or bass lines played over sustained pads. If the patch being used has a moderately long release time, it's possible that one or two more notes may start sounding before the first note has actually stopped sounding. In this case, a quick fix is to go the GLIDE page and set the glide mode to Retrigger or Mini and the glide time to zero. There will be no actual glide (portamento) but the patch will respond monophonically. That means that once we play a new note, all voices assigned to the previous note are released. Retrigger and Mini modes respond differently, so try both and use whichever is appropriate.

Patches with long release times may sound odd in mono mode. Try using the ROM patch, Heavenly, toggling between the Off and Retrigger or Mini modes while playing a lead line. The difference is quite obvious. Now try the same thing with the ROM patch Analog Power, which has a short release time, and the difference is much less obvious. Processing the patch with heavy reverb will mask the difference even further.

The last and most extreme technique to save voices is to actually turn off voices in a patch. For some patches, this is out of the question. If we take a ROM patch like Mystic and solo each of its two voices, it is obvious that they are both needed to give that patch its sound. On the other hand, try soloing each voice of the ROM patch, String Section. Each voice of the patch uses the same wave (String Ensemble) but they are detuned and panned hard left and right to create a natural stereo chorus effect. Try turning off Voice 2 and panning Voice 1 to 00. The patch still sounds like strings, but is less animated than before. Now change the Effect type from Hall Reverb to Chorus & Reverb. The patch still sounds a bit different, but the chorusing restores much of the depth that was lost from shutting off the second voice. The tradeoff is simple: using chorus, flanging, phaser or rotary speaker algorithms of the effects processor reduces the voice usage of such a patch in half. This idea can be extended to three voice patches as well. Call up the ROM patch, Wonder Years, turn Voice 3 off and pan Voice 2 to 00. Most of the character of the patch remains, but now only two voices are used rather than three.

Each of the four techniques described above is not a panacea by itself, but selection of the appropriate technique for each patch used in a given sequence can make the difference between being able to play a dense sequence with only the SQ/KS or requiring another sound module. If you've been feeling the limits of your box, give this "diet" a try before laying out your hard earned cash for another synth to get more voices. ▬

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

Missing or Damaged Issues?

Every month we mail out thousands of issues and every month about a dozen get "misplaced" by the Post Office. If you're ever one of the winners of this lottery, just give us a call (503-227-6848, 8 am – 8 pm Pacific Time) and we'll be happy to mail a replacement copy — no prob. (However, if you accuse us of nefarious schemes to "rip you off," you will be offered a refund and given helpful subscription info for other musician magazines.)

Solid Sounds

Robby Berman

Product: Sound Sets, Volume 3 and 4.
For: VFXs and SDs.
Price: $25 each set.
From: Pegasus Sounds, 6050 Adaway Ct., Grand Rapids, MI 49546.

In the mini-bio accompanying the review copy of Pegasus Sounds' Volumes 3 and 4, Eric Olsen, the sound designer behind the programs, mentions that his musical tastes range from new age to hard rock. That's a broad area, but it accurately describes the turf covered in these new sounds sets (which are $25 apiece, by the way). They're both fairly straight-ahead collections of 60 sounds each, with much solid programming and some surprising touches.

The first thing that struck me about Volume 3 was the preponderance of electric piano-related patches; I count 17 in all, nearly a third of the set. I liked some of these, but they're not, I think, Olsen's strong suit, as I'm not sure they offer much that's new to the canon. (In fact, TRANS-TINE, a sound shipped with the original VFX appears in this set; I assume this is a mistake.). My favorite among these would have to be EPNO/VIBES, a credible DX-y sound with vibes available as a Patch Select option, and the left Patch Select sound for YAMAHA EP, which takes the program right out of the electric piano realm altogether with a light, airy "whoosh" of a sound.

Volume 3 also contains a heavy dose of organ sounds, and I can see why. In addition to some good basic organ sounds, including one of the better churchy organs I've heard (SUNDAY MORN) there's a quartet of B-3 sounds that, to my ears, sound really excellent. They're pleasingly chunky (especially ROCK ORGAN) and adorned with a healthy amount of percussiveness. Keepers.

As far as the rest of our journey down the meat and potatoes aisles, shoppers, there are, first of all, a bunch of pianos, all decent quality, all on the bright side. I don't mean that as a complaint — some people like 'em warm, some like 'em to cut — I'm just trying to tell you, whichever kind of person you are, what kind these are. In any event, Olsen generally makes good use of the TIMBRE slider to modulate the filter cutoffs (high- and low-pass), so there's a helpful degree of adjustability built into the bright/warm ratio of all the patches. There are a number of other imitative patches I like, the Wurlitzerish PERCUS PNO and BARI SAX being standouts. You'll also find some straight-out synths and basses here; among the latter, SLAP-BASS is the best.

True to Olsen's stated tastes, there are a bunch of New Age patches offered (that lovely Patch Select for YAMAHA EP had already given him away). VOCAL/CRASH nicely marries a vocal pad to a crash cymbal for a metallically breathy coloration; DIGI-PERCUS and WORLD BEAT are useful mallet-type programs.

Nothing wrong with Volume 3, but I liked Volume 4 more. The categories of sound represented are similar to 3, but this set just seems more full of character. There's a better balance of instruments, the pretty patches are really pretty and there are some clever programming touches, but before I go into all that...

Boy, I'd thought that as far as the VFXs and SD-1 go, I'd heard it all. Wrong. Lately, I've been spending a lot of time with the TS-10, enjoying, among other things, the Hyperwave-created rhythm sections in the bass registers of some of its factory programs. Imagine my disorientation, then, when I encountered the second bank of Vol. 4, with its innocently-named WAVE-1 through WAVE-6, which do pretty much the same thing on the sd/SD! Boing! What keyboard am I playing? What planet is this? Yow — or should I say "cool?" Just hold down a bass note on the keyboard and stand back: an instant rhythm section! Now grab some keys above that and start jamming. What a nice bit of innovative programming, using the REPEAT mode of Envelope 3 to get waves to repeat in rhythm with each other. Now if I can just stop playing along with them and get this review written. One playing tip for these patches, by the way: since the timing within the envelopes is not perfectly precise and the various waves start falling out of the pocket after a few beats or so, just restrike a groove-generating key every few beats or so, and everything will stay locked tight. WAVESTATION in bank 8 is also one of these jammers.

Right from the first bank, I was enjoying Vol. 4. The very first program, BOSENDORFER, is a very usable one-wave piano, and ROXETTE-PNO is a nice fat one, so fat that at first I thought it was a hybrid of piano and some other kind of wave, until closer examination revealed that it's made up of two PIANO-16 waves filtered very differently from each other. Good work, Pegasus! The right Patch Select of ROLAND D-50 also gets over with me, what with its layer of strings and the SYNTH-BEL wave.

Other favorites in this set include PEDAL STEEL, where polykey pressure bends the pitch of a note downward, making it instantly easy to sound like the real thing. There are a number of analog synth emulations. Though MATRIX FUZZ is

beeg, CAN'T LET GO is my favorite — it's a very simple, and, maybe for that reason, a very pleasing sine wave-based patch with which chords take on almost a sung quality. PERFORMANCE (like its neighbor JAZZ BRASS) is a realistic swelling horn section horn section that also worked in very pleasing manner.

Volume 4 also has a fair number of organs, though I didn't find them quite as successful as the ones in 3, with the exception of B3 (it seems just that using the name makes it work out somehow).

All in all, both Volume 3 and 4 are good solid sound sets, with Volume 4 being a little stronger for my tastes (though the organs in 3 are nothing to sneeze at). Olsen's a very musical programmer, and it's easy to see how good music could be easily made with his programs. ▬

Bio: Robby Berman is a musician living in the lovely Mid-Hudson Valley in New York. His is a bucolic existence, interrupted only by occasional flashes of panic. His latest album is "Rings and Rings."

Sound Source Unlimited's "Film Textures"

Jack Stephen Tolin

For: SQ-1/R/2, KS-32.
Product: SQ02 Film Textures soundbank.
Price: 16k RAM card: $99.95; Disk (many formats available): $49.95.
From: Sound Source Unlimited, Inc., 2985 E. Hillcrest Dr., Suite A, Westlake Village, CA 91362. (800) 877-4778.

Welcome back, my friends, to the old SQ — or the new KS. It's that time again — time for a new synthesizer. And what better way is there to buy a new synth than in the form of a new sound bank? The SQ we'll be looking at this month is, or will be, a favorite of film scorers and new-agers. (It should be noted that this particular bank does *not* include any of the expansion waveforms of the SQ/32-voice instruments.) Sound Source indicates that the one whose talent, skill, and know-how went into this bank is Vincent Penny. Although no biography is provided for him, their literature indicates that their sounds are programmed by "professionals." (I presume this means that he got paid.)

Eyeing the Interface

Sound Source provides a convenient directory that they include with the package listing each of the sounds with a brief, sometimes vague description — you know how subjective something like sound is. Included is a "Controller Legend" which reveals which controller is used in a particular sound: vibrato, filter, crosstable, effects, or left keyboard split and right keyboard split. Also, for helpful quick-reference, there are divisions of sounds separated by intended use. For example, one such division has this heading: "Sounds 10-19 were designed to provide asynchronous arpeggio FX for film and background music applications. The assortment ranges from piano, guitar, and percussion to weird effects."

The down side of this is that the actual names for each sound tend to appear much like that of other in the same group. For example, sounds 00-03 are "Architectronics!1," "Architectronics!2," "Architecture#1," and "Architecture#2." These aren't necessarily the best *descriptions* of the sounds themselves.

More importantly, however, the names do give a hint that all of the sounds of like root names have the same template. That is, the essence of what is actually changed is just the waveforms themselves. This, in fact, is the case. As a synthesizer programmer, I find this to be a waste of space since I generally experiment with the sounds I already have by changing waveforms. Simply put, Penny has already experimented with this technique in producing this bank. As a result, there are less new program templates available to play around with.

Sonically Speaking

When I first saw that the title of this bank was "Film Textures" I was admittedly sadly expecting that most, if not all of the sounds would simply be a variety of pads. I was very pleasantly surprised. There *are* quite a few programs with strings, flutes and the like, which was expected. However, this bank includes *anything* but simple pads.

"ARCHITECTURE#1," for example, is an on-the-money string sound whose filter opens dramatically by envelope. Push the mod wheel forward and the filter closes to the extent that you can't hear the strings until the filter opens by envelope. This is layered with a woodwind sound which

achieves vibrato when the mod wheel is pushed forward. This is, in turn, layered to a panned airy breath wave which quickly fades in and will fade out when the mod wheel is applied. Put all three together and you have one of the most creative sounds I have ever heard on an SQ. This program ends up having its own background when played — quite moving.

Although "#2" is similar in template, each waveform has been changed to a very effective other. This is the case with most of the programs with similar names. In no way should you assume that just because a group of programs have similar names they then must sound similar — they just *behave* similarly.

As was noted earlier, sounds 10-19 were all set up to play arpeggios with various instruments: pianos; guitars; marimbas; "log drum/bell hybrid"; wood block; rim and wood block; percussive metal sounds; noise, koto and metal; bells; and dissonant bells and tines. As you may have guessed, these sounds all have just about everything about them in common — everything left to the center to the right in the stereo spectrum. The waveforms chosen are effective, for the most part. The major downside of this is that it can easily get old, especially if you're not utterly enthused with the idea of getting ten sounds all based on the template. This is especially true for arpeggiated sounds.

The five "SLIDEme&GLIDEme"s are based on a sound with one voice acting as strings and the others acting as a layered mono-synth sound. The strings are loud, clear and effective and the overall effect is ominous for each.

The three "JUST FOR FUN"s are rather an obnoxious sort. The feedback and distortion overtake the waveforms in a loud way and cut off suddenly.

The four "FATHER NATURE"s, four "FEATHER NATURE"s and two "ORGAN NATURE"s, despite the limited creativity in their names, are *excellent* sounds. What I really mean is forget about the Wavestation you wanted for Christmas. Waveforms are switchable via mod wheel. The best thing about these programs is the easy accessibility to greater avenues of discovery. Using these sounds (and most of the sounds in the bank) as guides will make synthesizing your own sounds fun. If you have a CV pedal, you can go even further with modulation routings. These are, by themselves, quite inspiring sounds. Switch from strings to flute, from guitar to vocal pad, and so on.

"SOUNDS 70-79 are percussion effects good for all occasions." Numbers 70 and 71 are some of the heaviest toms I've ever heard layered with timbale and rack bell. Others in the series include a variety of percussion and instruments otherwise known as non-percussive devices layered together. There are some very effective splits here.

The "Human TRIBES" series (1-3) and "Tri-Borg" series (1-3) are a few among those "...designed for visual imagery, to complement a wide range of multi-media applications requiring evocative 'soundscapes.'" I picked these to mention since they are my favorites of this section; I consider them to be quite useful in film settings. There is panning of percussive attacks to the left in the "Human TRIBES," one wave that fades in and one sustaining wave on the right — sonic excellence. In the "Tri-Borgs," there is panning to the left, center and right. For example, one has pizzicato, an electric guitar and marimba with reverb (of course). Another winner.

"A Conquest" and the "SPECIAL EFX" patches (1-6) are superb for background atmosphere and can be used to create some really exquisite, musically emotional interludes. "SPECIAL SOUNDS" 1 and 2 are similar, but are more musically useful in more of a variety of settings. "EDGE of Awareness" is straight from the motion picture soundtrack *Dune*. "Paul meets Chani," by Toto: a soft, mellow, whistle-like sound layered with strings that fade in.

The mod wheel tends to add vibrato in a variety of the sounds in the bank. However, some of the sounds react in some very creative ways: reverb disappears, one wave drops from earshot while another races across the stereo spectrum, one wave drops while another enters (crosstables), one wave drops while vibrato is added to another, etc.

The "Value Volume VU Meter" for Film Textures:

1. Documentation	*****	Pro
2. Individual Sounds	*****	Pro
3. Template Originality	**	Con
4. Absence of Throw-Aways	**??	?
5. Effectiveness	****	Pro

When checking the value meter, keep in mind that #4 depends on #2 as well as #3, and that #5 answers the question, "How does this bank accomplish the task it set out to do?" In order to evaluate throw-aways, I had to take into consideration the fact that templates were used over and over again for many of the sounds. This fact diminishes across-bank originality of the individual programs to some degree. This, in turn, may alter the effectiveness of the entire bank, depending upon whether or not you like one of a series, you will probably enjoy the rest, and vice versa.

Overall this bank contains some of the most moving, original, creative and inspiring sounds I've ever heard on a synthesizer — *period.* Even across a series, the wave changes are right on the money. If you're into composing for film, new-age music, or simply want some new sounds to refresh your synth-palette, this is a bank you definitely need to look into. ▬

The Unexpected Hanging

Bob Lang

Some sounds; you get used to them so soon that you hardly notice they are there. — Hercule Poirot

I have recently encountered a problem that can best be described as the "Unexpected Hanging." My problem is that notes in a song playing on my Ensoniq SQ-2 occasionally and totally randomly hang on much like a stuck automobile horn. The problem was not too noticeable at first as I was mainly using instruments that die out rapidly, like piano and guitar, but when I started using instruments that had the ability to sustain notes, like trumpet or organ, it became unbearable. The problem was not reproducible. For example, playing the same MIDI file five times might yield hanging notes in three cases and the same notes would not hang in any of the three cases. Occasionally some notes would not be played at all. This article will document the tracking down of the problem with only minimum hardware and the guidance of great fictional detectives.

This promises to be a most interesting and unusual case. A simple case and yet in some ways an instructive one.
— Sherlock Holmes

My hardware system is shown in Figure 1. The problem occurs when MIDI files are transmitted from the computer to the Ensoniq SQ-2, not when MIDI files are played on the synthesizer on the Proaudio card. This is a classic problem with several sophisticated pieces of hardware and software. This is also the type of problem the user needs to be able to solve since each hardware/software manufacturer will assure you that it is not his product; it must be the other guy's product causing the problem! I was starting the solution to this mystery with several possible suspects including...The MIDI cable? The hardware interconnection? The sequencer software? The Mediavision Input/Output driver software? The Mediavision Proaudio computer card? The Mediavision Midimate interface box? The Ensoniq SQ-2 Synthesizer?

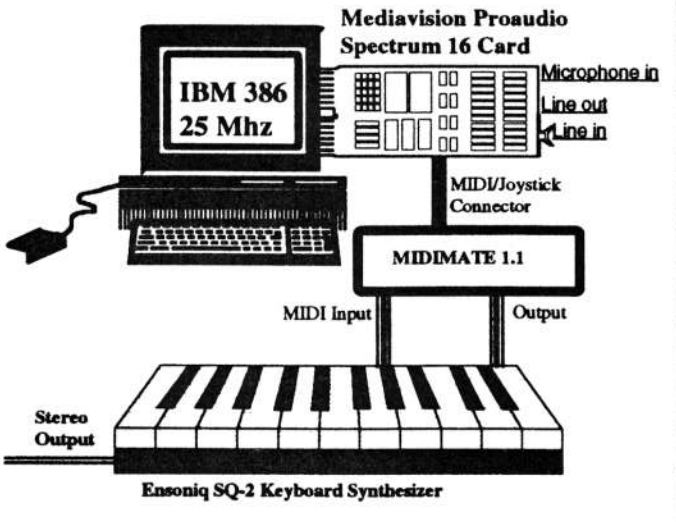


Figure 1 Hardware Setup

The first thing I tried was the replacement of the MIDI cable. Several people had told me that they had experienced problems due to a faulty cable, so I replaced my homemade MIDI cable with a nice new twenty foot commercially manufactured cable. It had no effect.

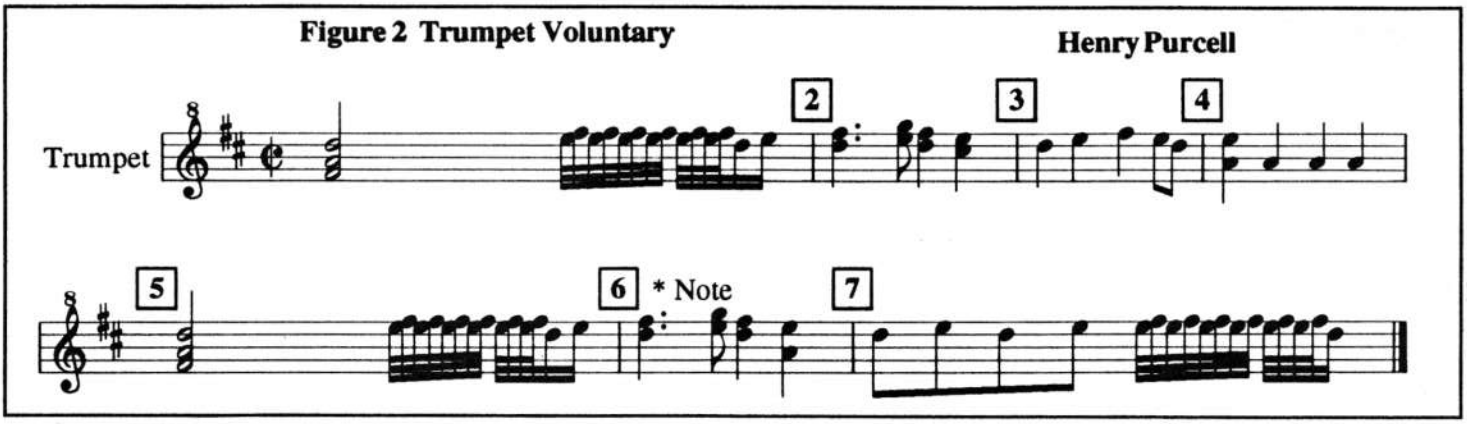
Well, maybe there's some sort of MIDI loop being set up between my computer and the SQ-2, so I disconnected the MIDI out cable from the SQ-2 to the computer. This had no effect on the problem.

Next, I called Mediavision but couldn't get through so I sent them a letter outlining the problems and asking if they had any suggestions or possible fixes. I also asked if they had any problems reported with their latest drivers, MVSOUND.SYS, version 3.07 or TAPIMV2.COM, version 1.38. I continued with the investigation as I awaited the response.

Then I called the Ensoniq help line. After a brief description of the problem, the technician said software sequencers were notorious for not sending note off commands, and maybe I should invest in a "PANIC" button which would send note off commands to basically silence the SQ-2 when a note was hanging. This didn't sound like my kind of permanent solution, so I pursued the investigation elsewhere.

The next thing I investigated was the sequencer software. I have been using two software sequencers: Voyetra Technology's *Spectrum Plus* for DOS and Passport Design's *Musictime* for WINDOWS. Both of the software sequencers have the hanging note problem. Since it is extremely unlikely that two different software sequencers from two different software vendors would have the same software bug, I eliminated the software sequencer as a suspect.

Both software sequencers do have a common mode failure which is the Input/Output driver. The software supplied by Mediavision that controls the MIDI port on the computer, MVSOUND.SYS, is used by both software sequencers. How can one test an intermittent failure of driver software? What if I were to set the Ensoniq internal sequencer to record the MIDI data from the computer? If the sequencer recorded a hanging note it probably would indicate a data transmission problem. If the Ensoniq hung, but the internal sequencer data



from the computer is OK, then the problem is in the SQ-2. One of the sequences that was particularly vulnerable to unexpected hanging notes was *Purcell's Trumpet Voluntary* shown in Figure 2. I used the Voyetra Technology's Spectrum Plus sequencer program shipped with the Mediavision Proaudio Spectrum 16 card to send the MIDI data to the SQ-2. I recorded the data on the SQ-2 internal sequencer. This time notes at the beginning of measure #6 hung on and I had it captured in the SQ-2 internal sequencer. I could play the sequence stored in the Ensoniq and each time the same notes would hang. At last something that was reproducible!

To get a printout of the MIDI data on the Ensoniq internal sequencer, the sequencer was played back at a slower rate and the data was captured on the computer using the Shavano Music freeware program called *M_SCOPE. M_SCOPE* allows a user to visually display and print MIDI data received by the computer. A printout of the data showed that there was no note-off command for the F# and D at the beginning of measure #6. I think it might be a computer problem!

While the proceeding nearly convinced me it was a computer problem, I felt there was still a possibility of Mediavision trying to blame Ensoniq for losing or failing to receive the data properly. To be 100% sure it was a Mediavision problem I needed another external synthesizer. At this point my local Ensoniq dealer was very helpful by loaning me a Yamaha TG100 Tone Generator. The TG100 sounds aren't much to speak of, but when I hooked it up to the computer in place of the SQ-2, the TG100 also hung. Of course it did not hang on the same notes due to the randomness of the problem, but it did hang. Now I was sure it was the Mediavision products.

Now it was time to go back to Mediavision secure in the knowledge that the problem was in their hardware or software. When I finally got the response to my letter I opened it with anticipation and there it was — the solution to my problem: "... put T:1 at the end of your MVSOUND.SYS device line in the CONFIG.SYS file" It was so simple and straight-forward. It was wrong.

It was time to call Mediavision again. They returned my call and we ran through the problem while they were on the line. It did hang while we were talking on the phone and Mediavision suggested that we put the MIDIMATE in a loop by connecting the MIDI in to the MIDI out plug and running the MIDITEST program. MIDITEST is a utility program supplied by Mediavision that checks the hardware. We ran MIDITEST and it passed. How can this be? I ran MIDITEST again. It passed. Mediavision said call back if the problem returned.

What is going on? I know I have a problem, but it passed Mediavision's hardware test. Maybe the MIDITEST was not long enough to see the failure. I ran the MIDITEST twenty-four times. It failed three times. Yes, I do have a hardware problem. I called Mediavision and they suggested a return for repair. I returned the Proaudio Spectrum 16 computer card and the MIDIMATE 1.1 interface.

While I was waiting for the Mediavision repair, I decided to invest in the cheapest MIDI interface I could find. I purchased Musicquest's PC MIDI card for $79.95. I installed the card along with its WINDOWS 3.1 driver. It worked fine and there were no hanging notes.

Story now completely extracted like aching tooth.

— Charlie Chan

The repaired Mediavision equipment arrived by UPS. I reconnected the card and anxiously awaited the verdict. Was the unexpected hanging cured? No! The Musicquest and Mediavision cards are now in the computer side by side. The Mediavision hangs the Musicquest does not.

The Mediavision card is a good multipurpose card. It has excellent 16-bit audio capability for creating and playing WINDOWS 3.1 ".WAV" files. It is ADLIB and SOUNDBLASTER card compatible. It has a 20 stereo voice, four operator FM synthesis synthesizer which does not hang. But for controlling my external Ensoniq synthesizer, I'll take the Musicquest PC MIDI card to solve the case of the "Unexpected hanging." ▬

Bio: Bob Lang is a registered professional electrical engineer and computer/music/mystery enthusiast using IBM Multimedia Personal computers and Ensoniq equipment.

Suggestions, Hints and Tricks on Using the DP/4

Part One

Vance Galloway

The DP/4 is a very powerful tool. Its multitude of parameters, programs, algorithms, units and configurations can be a lot to deal with. What follows are a few general suggestions, hints and ideas that I have come up with to help DP/4 users get more out of this great processor. Since I am a guitarist, I use 1-input configurations most often. While my comments are obviously going to be influenced by this, most of them, nevertheless, hold true no matter what sort of setup you have.

First the Very General

When using more than 1 Unit to affect a single Sound Source remember that changing Effect Routings can radically change the sound of the effect. Routings, for those of you not familiar with the Unit, are the settings which determine which of the DP/4's Units (that is Effects) are working in Series (the output of one going into the input of the other), Parallel (both Units receiving the same signal and affecting that signal separately), or Feedback (output from one being sent to the input of the other as well as being sent back to the input of the first. For information on Routings see sections 3-5 through 3-8 in the DP/4 manual).

Experiment freely with these different Routings. If you have a sound that you like, but wish to make it bigger, try routing some of the Units in parallel instead of series. For instance, if a delay algorithm is loaded into Unit C and a reverb is loaded into Unit D, and CD are in series (as is the case with 4 unit preset #10, "Studio Vocal 1" or CONFIGuration preset #2, "Rock Gtr Setup") try changing the CD Unit Routing. Notice how much wider the effects now sound. If you want to make a sound tighter, try using a Series Routings. Play with some of your favorite DP/4 sounds by simply changing the Unit Routings. And don't forget to experiment with Feedback Routings. On several occasions utilizing the DP/4's Feedback Routings have given me very pleasant surprises, creating entirely new sounds out of otherwise "standard" presets. (See sections 3-6 through 3-12 for information on Routing.)

Remember that changing a particular effect's level as opposed to its mix amount create radically different sounds. This is very important. Changing the mix amount means altering the ratio of processed to dry signal that leaves the Unit whereas the Level (of course) controls the output volume of both processed and dry signals. Experimenting with different settings, especially on a multi-Unit configuration, can reveal very useful changes in the sound. You might use very high mix ratios and very low volumes in one preset and find that you need just the opposite in another. Since there are so many variables here (Unit routing, number of input Sources, which algorithms are being used) I can't give any specific suggestions except to play around with various settings and note the results. In general; higher mix ratios yield wider or bigger sounds while lower ones sound a bit more natural. (See manual section 4-3 for Volume and Mix information.)

There is also a big difference between turning off a Unit by using Bypass as opposed to Kill. Bypass has the effect of simply turning the Unit off while allowing dry signal to pass through. Kill, on the other hand, prevents any signal from passing through. Therefore, if all your Units are in series and you Kill Unit A, none of the other Units will get any signal. However, Kill can be very useful in any routing where any of the Units are in parallel. For example, let's pretend you have Units A and B running in series and have C and D running in parallel and AB and CD running parallel. If you Bypass Unit C, there will then be dry signal running straight from input through the bypassed Unit C, to output. This means you will have dry signal running to the output. Sure, this might be desirable. But if it's not, set Unit C's (B)ypass (K)ill setting [found by pressing Edit then Config then scrolling to (K)ill]. This will keep any signal from passing through Unit C while allowing all of the other Units to work just as they had before. Again, experiment freely and you'll see the profound usefulness of this option.

Now the More Specific

Bypass/Kill can also be very useful in eliminating the glitch which occurs whenever you switch presets. (This happens on virtually all digital effect processors.) Instead of actually switching presets, try simply Bypassing 1 or more Units (using the Bypass/Kill feature). By doing this your sound changes instantly and the change is glitch free.

This ability to turn on and off each Unit individually (Bypass/Kill) is a DP/4 feature I use constantly. As a guitarist, I was used to having multiple footpedal effects on the floor in front of me when I played. With the DP/4 I can once again turn individual effects on or off (like distortion and delay) while leaving other effects (like reverb and chorus) on. This is especially a boon to those of us who want to improvise and use MIDI controllable digital effects. Now we aren't stuck to pre-programing the sounds that we are going to want during the course of an improvisation. Now I simply set up a few presets which each contain effects I am likely to use and turn on and of the unwanted effects (Units) when the need arises.

This individual Unit on/off approach is especially attractive when you consider one very nice feature about the Configuration Presets: Whenever you save one, all of the routing information and the information about which Units are on or off is saved with the preset. So if you save a Configuration Preset (#34 for example) with Units A and C on and B and D off, it will appear that way each time you recall it. By this method I can call up my chorus/reverb preset (#34) and, at the appropriate time in the song, turn on (Un-Bypass) my distortion which is Unit B and at then later turn on my pitch shifter which is Unit D, all without altering my reverb and chorus. All you have to do is define a MIDI (or DP/4 footswitch) message to control the Bypass/Kill for each Unit. (To do this refer to section 6-6 of the manual.) Personally, I use MIDI control messages because that allows me to Bypass each Unit from my MIDI footpedal unit. Depending on your setup you might want to choose something else. Also note that it is easy to turn on or off more than one Unit at a time by sending several MIDI messages to the DP/4 a the same time. On my footpedal unit I have one pedal assigned to Bypass each of the DP/4's four Units and one pedal to Bypass A and B simultaneously and one to Bypass C and D simultaneously. You should use whatever works for your application. *Experiment freely.*

I also recommend heavily utilizing the DP/4's ability to change parameter values in real time. This is probably the best way to keep your effect use sounding fresh and interesting. By using this feature you can change (for example) reverb decay times, delay times, eq settings etc. (See section 4-4 of the manual for information on assigning controllers to specific parameters within any algorithm.) The ability to crossfade between two algorithms is also immensely useful, creating a smooth transition between one timbre and another. (See section 8-5 and 8-6 on how to create these crossfades.) What the manual does not mention is that crossfades can be set up between any parameters that you want. That is, you could have a pedal turn up the preamp gain and turn down the high frequency gain in the Guitar Amp algorithm in Unit 1, while turning down the delay time and up the feedback in the delay algorithm in Unit B, while turning up the stereo spread of the chorus in Unit C, while turning down both the reverb time and mix level of the Large Plate Reverb in Unit D. All of this could be achieved by pushing one pedal. While this example might not be exactly what you (nor I) might actually do, it does express the idea that a huge (or very subtle) smooth (or sudden) timbral transition can easily be performed on the DP/4 by changing some of its parameters in realtime. Again, experiment.

Well, these are some of my more general suggestions to get more out of the DP/4. I hope you find them useful jumping off points in your own use and understanding of the DP/4. In the next article I will be getting into some more specific tricks about how to use realtime control on the DP/4.

And Now a Few Requests/Suggestions for the People at Ensoniq

1) Allow the option to use input voltages as controller sources. You use input voltages to alter the VCF in the VCF-Distortion algorithm. Why not make it a universal option selectable in the System/MIDI mode where the other controller sources are?

2) There ought to be a way to switch between a Config preset and a regular preset without having to touch the front panel. In fact, it's very necessary that I be able to do so. I use some sounds which I have saved as Config Presets right after or before ones I have stored as regular one-source presets. I have too many sounds to save them all in the 50 Config Preset spaces and I need to have instant, hands-off access to each of my sounds while I'm playing live.

3)There ought to be a way to have completely different processing on the left and right sides from a single sound source. I want to be able to effect a single source so that the right side has distortion and the left side is clean. Sure, there are a number of ways to try to trick the machine into doing this (e.g., distortion in series with a multitap delay, 100% mix on the delay, pan all taps hard right with 0ms delay time. Then do the same sort of thing to whatever effects you want on the left, running AB and CD in parallel). But none of the ideas I've had are at all satisfactory. Especially when it should be no large feat to put in a parameter that controls the output pan of the effect. It could work like a stereo channel on a mixing board; If set to center, the effect would be in stereo, if set anywhere else the effect would go to the output selected. This would *greatly* increase the pallet of sounds one could coax out of the DP/4. ▬

Bio: Vance Galloway is a Composer/Musician and Sound Engineer who does Mac based digital editing during the day. At night he collaborates with other musicians as well as with choreographers and multimedia artists. His own music, it has been said, has "little or no current commercial potential within the Music Industry as it now exists" which is just fine by him.

BACK ISSUES

Back issues are $2.00 each. (Overseas: $3 each.) Issues 1– 38, 61, 67 – 72, and 82 – 84 are no longer available. Subscriptions will be extended an equal number of issues for any issues paid for that are not available at the time we receive your order. **ESQ-1** coverage started with Issue #13. **SQ-80** coverage started with #29, (although most ESQ-1 coverage also applies to the SQ-80). **EPS** coverage got going with #35 (and also applies to the **ASR-10**). **VFX** coverage (which also applies to the **SDs**) got started in #48. The **SQs** got going in #63. (SQ articles also apply to the **KS-32**.) **DP/4** coverage started in #88 (much of which also applies to the **ASR-10**). **TS-10** owners should check out sample reviews (EPS/ASR) and SD & VFX programming tips. Permission has been given to photocopy issues that we no longer have available — check the classifieds for people offering them. A free back issue index is available which contains the tables of content for all issues since Number 43.

Ensoniq's ESS-16

Anthony Ferrara

For: EPSs and ASR-10s.
Product: Marcus Miller Signature Set, ESS-16, three disks and manual.
Price: $39.95.
From: Ensoniq Corp., 155 Great Valley Parkway, Malvern, Pa. 19355.
Phone: (215) 647-3930.

[Ed. note — This review was written before Anthony started working for Ensoniq.]

ESS-16 is a set of electric bass samples built around the sound and style of Modern Jazz/Funk bassist Marcus Miller who has recorded with such luminaries as the late Miles Davis, Grover Washington, Jr., and David Sanborn. Marcus was sampled while performing on a Fender Jazz bass, using DR Tight Fit strings, which, as the accompanying manual informs us, "...are wound tighter than normal strings, and produce a cleaner, punchier sound." It features sound design and sequencing by Scott Frankfurt. Those of you who are 16+ users will be familiar with his sequencing and sampling work, which can be found throughout the fifteen *Essential Sound Disks* included when you purchased your keyboard or module. His *"Club Scene Demo,"* located on ED-015, is a particularly good example of his abilities in these two areas.

The three demo sequences "MM-1 SONG," "MM 2 SONG," and "MM-SONG-3" are great jamming material, including only DEMO SHAKE (cabasa) as accompaniment. However excellent they are as solo bass lines (and they are really well done), I can't help thinking how helpful it might have been to have a few demo sequences in a group situation to illustrate the context of the samples. Maybe next time. Unfortunately, details about the three sequences are a bit sketchy in the enclosed 16-page manual, written by Tom Tracy. Since I was so curious about the sampling and sequencing processes that were described, I called the producer of this project at Ensoniq, Tony McAnany, who filled me in on some of the following very interesting details. Marcus played onto digital audio tape, after which Scott transcribed his bass lines, and constructed the three demo sequences.

Here's the news, disk by disk. I should say at the outset that the mod wheel, as well as Poly-Key pressure, provide vibrato throughout the set. At any rate, here goes:

Disk 1 contains one massive sample entitled STUDIO BASS, at a fat 1564 blocks. This is a great sounding Jazz-Funk sample featuring excellent patch select implementation, and is probably the best electric bass sample that I have ever worked with. The patch selects include various pick mutes, picked and slapped harmonics, tapping, as well as string glides and bends. Absolutely awesome! While this sample is admittedly a memory-glutton, the manual makes the suggestion that you try copying layer 2 to an empty instrument location, which gives you a new muted instrument of only 137 blocks.

Disk 2 contains Warm Mutes (1427 blocks) and Demo Shake (29 blocks), a bass and a cabasa (rattle) sample, respectively. The cabasa, a single wavesample, is included because it is used in demo sequence "MM 2 SONG," which is found on the same disk. Warm Mutes features Marcus playing a variety of string mutings with his right palm. The patch selects are crammed with plenty of nuances in the area of articulations, such as pick noise, slides in both directions, as well as tritones slides. The ** patch in particular sounds like a dance-oriented synth bass, with a short and punchy decay-rate.

Disk 3 holds the last of the samples in this set, titled as follows: FINGRD BASS, GROWLIN BASS, SUPER MUTE, and MM-SLAP BASS. FINGRD BASS, at 658 blocks, is a somewhat dark-toned but crisp, very ingenious multisample, which contains a number of interesting patch selects. These include slides in both directions, tap-slides, hammer-ons, and grace notes. Stacking this one along with STUDIO BASS results in a tone reminiscent of the classic Rickenbacker electric bass with Roto-Sound strings, as in the playing of Chris Squire of Yes. If you remember the bass in *"Roundabout,"* this stack is very similar. GROWLIN BASS, at 398 blocks, is appropriately named. Its patch selects contain various pops, smacks, octave and legato effects, although a couple of the descriptions of patch selects seemed to be reversed, and the ** patch seems not to have been implemented, at least on my copy.

SUPER MUTE consists of a single wavesample, which would explain its light weight of only 264 blocks. This one is somewhat brighter and more staccato than FINGRD BASS, and once again the implementation for the ** patch seems to be missing-in-action. I did check that the same patch worked on other samples, so it was definitely not the buttons on my EPS-16 PLUS. Likewise, with MM-SLAP BASS (156 blocks) which features a nice legato layer with 0* patch, and an interesting velocity-triggered whole step graced note on ** patch. The *0 patch (on my disk) did not match the manual's description.

As far as who might really like this set, here's how I see it. If you are familiar with the Miles Davis album *"Amandla"* which Marcus performed and produced, you get the idea as

far as context. If you're looking for the cleanest, funkiest, punchiest, electric bass samples for the EPS-16 PLUS/EPS that you will probably ever hear anywhere, then ESS-16 is definitely for you. The patch select glitches didn't detract from my overall impression, which was very positive. My only question is in the area of price -- some may consider $39.95 for a set of three disks to be a bit steep. Keep in mind, though, that the price does include some nifty cover illustrations by famed visual artist Peter Max, who even gets his own bio and photo in the accompanying booklet.

All joking aside, I can tell you that some of the EPS-16 PLUS/EPS sampling zombies who I played these for were absolutely floored at the aural quality and presence that this set displayed. All in all, my feeling on the matter is this: Two thumbs straight up on the *Marcus Miller Signature Set*, with slight reservations only in the area of price. ■

Sacred Sequences

Garth Hjelte

For: ASR-10 and EPS-16 Plus.
Product: The Gospel Set — 8 Play-Along Sequences including new sounds and printed music.
Price: $10 per song or $60 for the set. Demo cassette and song list, $3.
From: The Rhythm Factory, 1910 Campfire Court, Lewisville, TX 75067. Phone: (214) 315-8141.

Church music is not just church music. So often we forget the influence the organized Church had on the music of the past millennia. It is even arguable that the belief in God was the major force that guided music through its vast past, the countless forms and inter-cultural forces that it played. Even the appearance of "rebellious" rock-n-roll was underlaid by gospel roots, from music that had no other intention but to sing to God.

I had the pleasant opportunity last year to travel with a singing group called the *Carpenter's Tools*. We played one, sometimes two concerts a day in various churches. Very typically, the music pastor had a Mac and was sequencing an M-1. Often it was an EPS. Almost always, the poor music pastor would be driven nuts trying to teach the pianist or the organist how to operate the new-fangled synthesizer. The church has always had a problem keeping up with the times, since it has not been the musical pace-setter that it used to be (unfortunately).

Which brings us to Rhythm Factory's new *Gospel Set* of play along sequences. This would make Mr. Music Pastor's job a whole lot easier. They offer eight popular worship songs that would prove very useful to any church service. For each song, you get a disk containing the sequence and the sounds, and printed music that notates the part that you can play with the sequence. Usually this is the lead part, and the sequence covers the accompaniment. On each disk there are two banks; one that loads the entire song, including the play-along part, the other loads all the sounds and a sequence that omits the play-along part so you can play it.

The Concept

I think it's great. If you are Mr. Youth Pastor, these are wonderful sequences for the whole congregation to sing, and for soloists to sing for special music or during offerings or communion. And these are easy to use, so training your personnel won't be difficult — just a couple of buttons to push. Sequencing sacred music is tough enough; now we've got somebody who is offering them! And if you are interested in worship songs, you can enjoy these at home, playing along with them. I would have loved to have had these along on tour — they would have come in very handy.

Bryce Inman has been involved in the church music field for years (I was not surprised when I found his name in most of Word's music books as being responsible with editing the transcriptions), and has been EPS-involved and *Hacker*-involved since forever. SO... when five examples of his work, along with his demo tape, popped in my mailbox, I jammed them in and came to some conclusions...

The Sequencing

Bryce arranged and performed these, and his talent shows. They are simple and they are innovative. His version of *"Praise Him, Praise Him"* is in 5/4; I haven't heard a piece in 5 in church yet! Yet they are understandable, concise, and clear. Most of the songs go through the main theme once, then change sounds and textures to provide development, then finish with the main theme again. Bryce does a good job at making performances out of them. I would have liked to have seen more dramatic dynamics; I found that while listening to the demo tape I would fall victim to distraction. But then, I've never heard a demo tape that didn't do that to me. I don't believe you'll be disappointed with the material here. The songs are all familiar and usable.

The Sounds

A welcome feature about this set is that the samples are all original, each designed for that particular song. Great! The sounds are all top-notch as well; even if you're not interested in the sequences, the sounds are worth the package itself. The basses are unique; they don't sound like every other bass sample. The organs are good. The Snare+Roll caught my ear, as the accordion on *"Swing Low, Sweet Chariot."* It's superb (he does this sound good respect by playing it very well on the sequence, again proving that sounds need to be executed well to make them sound realistic). I think that this extra measure sets this package apart from the others. One drawback is that the sounds have to be compromised somewhat on the effects front because they all must work under the Bank Effects, since we're sequencing. Sometimes I would have liked to hear more reverb on the snare. But that's just a victim of design.

The Sheet Music

These really set this package apart. They are sharp and clear and show what instruments you're supposed to play and when, as well as what notes. I talked earlier about the need to make this stuff as clear as possible. This accomplishes that goal.

The Price and Packaging

Well, $10.00 per song is very reasonable, and $60 for the set of eight is even more reasonable, even if just for the sounds. Definitely worth it. I would try to convince Bryce to put out a series for the Original EPS (the sequences only play on the 16-Plus and ASR-10). I'm sure that it was purely a time and money decision on his part. I was, however, concerned with the lack of pro artwork with the packaging. One thing that sets Ensoniq's merchandise apart from the rest is Peter Max's beautiful prints. It makes their stuff play and work much better. [Those last two sentences should be recognized as basic, cynical tongue-in-cheek commentary.] If you are a musician who is into playing sacred music, and you own an EPS-16 Plus or ASR-10, these are an essential purchase. ▬

Bio: Garth Hjelte is the owner of Rubber Chicken, where they think recession means recess.

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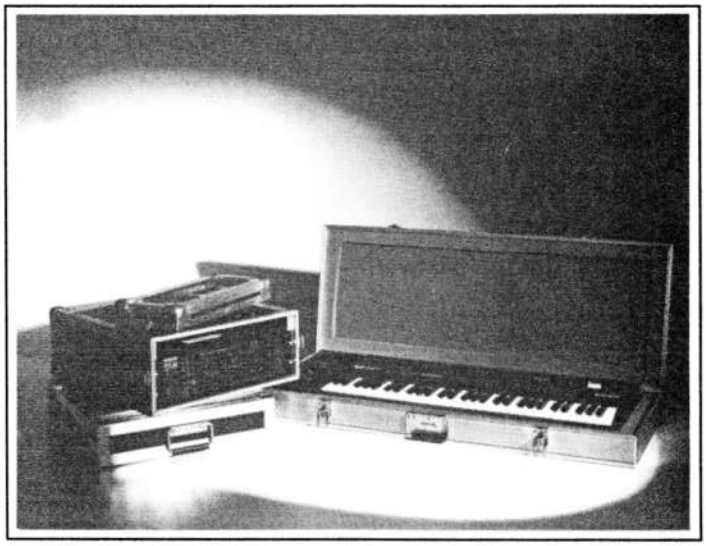

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Random VFX/SD-1 Tips

Sam S. Mims

Making Bass and Drum Velocities Consistent

When recording bass or drum parts into the sequencer, there are many occasions, particularly in dance music, where you will want the notes to be all played at the same (maximum) volume. Yet some will invariably have been recorded at a lower velocity. Instead of using the event editor to fix the individual note velocities (horrible tedium!), there is a much easier way to do this.

On the sequencer's second Track page (press TRACK, then *MORE*) is a feature called SCALE. This allows you to multiply the values of a selected controller by a selected amount. With the RANGE parameter, you can even set a specific note or time range over which the scaling will occur. In other words, you could multiply pitch bend values in just the third measure by 80 percent to correct a wildly bent note, or you could double the amount of mod-wheel vibrato in just the top octave. It's a very useful feature, and lo and behold, one of the controller choices is KEY-VELOCITY. To accomplish the task of maximizing all the note velocities of a track, set the SCALE-AMT to 9.99, its largest value, make sure RANGE is set to ALL, then press *YES*. Unless some notes were played at extremely low velocities, this should max everything out at a velocity of 127; if not, simply repeat the procedure until all is cool.

Avoiding Missed Patch Selects

Let's say you are playing a piano patch you have set up for a tune, and at one point in the song, you need to quickly punch up the *0 patch select, which instantly calls up a flute patch. It's great not having to change programs as you would on most other keyboards. But how many times have you hit the wrong patch select button and ended up playing what was supposed to be the flute line with that flanged accordion patch?

The solution is simple. Unless you need those other patch selects in the same song, program all the patch selects (0*, 0*, and **) identically, so that they all call up the flute sound no matter which buttons you hit. Some might call it cheating; I call it getting it right every time.

Adding Motion to Static Patches

I'm a fiend for stereo motion; even a subtle stereo panning effect makes patches sound much bigger and much more interesting as notes are sustained. But frequently, when I want a slow-LFO type of panning, I'll find that I've already delegated the voice's LFO to vibrato — a much faster effect that what I'm after.

Fortunately, due to the flexible modulation routings that Ensoniq has always provided, you can program ENV 1 to take care of this for you. Go to the ENV 1 page, then press COPY, and select DEFAULT. The next display reads "TYPE=," and if you push the data slider all the way up, you get SLOW LFO. Press the YES button.

Now, on the second Output page, set PAN=00, MODSRC= ENV 1, and MODAMT=+99. Excellent, dude! If you've got the voice running through the effects processor, this smooths out the extreme panning very nicely. To increase or decrease the pseudo-LFO rate, go to the second ENV 1 page and change all the Times values the same amount.

I like to go beyond the concept of a simple oscillator sometimes and set the Times parameters to somewhat different values. And for even more randomness, I set the VEL-ATCK to 20 or so; this speeds up the attack segment of the repeating envelope (it is sped up every time the envelope goes through a cycle) depending on the note velocity.

Creating Non-standard Tuning Without Pitch Tables

Many pad-type patches sound great with a percussive attack, using a wood block or temple block type of sound. This works best if the attack waveform sounds fairly consistent across the range of the keyboard, but with normal pitch tuning, the highest and lowest notes are shifted too extremely. The alternatives are to set PITCH-TABLE to ALL C4, or to set up a custom pitch table. The latter can only be used by giving up Voices 5 and 6, which I don't like to do, and the former removes all tuning whatsoever, leaving every key playing the same pitch.

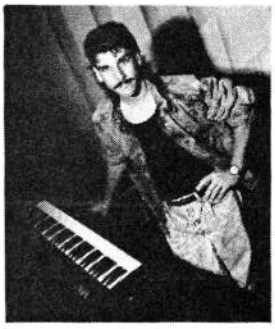
The solution is to go with PITCH-TABLE=ALL-C4, then use the keyboard scaling as a pitch modulator. As an example, set up a voice with WOODBLOCK as the waveform, set the pitch table to ALL-C4, and on the Pitch Mod page, set MODSRC=KEYBD, MODAMT=+80, and everything else to zero. You should hear a tuning over the range of the keyboard, but it takes four octaves worth of keys to play an octave of pitch. This voice should layer nicely with a breathy vocal pad.

If you're feeling a bit frisky, try a MODAMT of a high negative value; it tunes your synth upside down, sort of.

More on Pads

Here's another trick for setting up a pad which is a combination of an attack sound and a sustained mellow pad. I normally use a voice for the attack sound, and a couple of other voices for a smooth pad. To save on polyphony, particularly on the pre-32-Voice models, I tried making pads out of what were supposed to be percussion sounds — and the results were great! For instance, I would take the MARIMBA waveform, use a quick attack time to get the mallet hit, and then program the remainder of the voice as if it were a slow sweeping pad. The result: a mallet attack which blends into a pad, using only a single voice. Now you can layer something else on there to make the pad really smooth.

You can get some fabulous sounds this way. My favorite waves for this: MARIMBA, KALIMBA, POTLID-HT, and RACK-BELL. ▬



Bio: Sam Mims is a studio session player and programmer in Houston, and is keyboardist for Richard Elliot. He owns Syntaur Productions, a company that produces music for television, radio, and film and markets sounds for Ensoniq keyboards.

Business As Unusual

Part Two

Garth Hjelte (of Rubber Chicken Software)

Picking Up

Last time out we explored setting up your own business to sell your musical wares. We worked with what you had to sell, how you would sell it, and how to set it up to make maximum profit. We also took a quick look at the market, as it is, and saw what strategies to best take advantage of it.

This time I want to focus specifically on what I do — selling samples. Do you want to do what I do? (Oh, my mind whirls with thoughts.) It's not that hard — but it probably takes more work than you might think.

Even if you're not interested in selling samples, perhaps this exercise will serve as a example for whatever business you do wish to get into. The basics of quality and customer service apply to anything having to do with business; I learned my basics from working at the phone company! And, please forgive me for editorializing a bit, but over the years I have intentionally formed some strong opinions.

A Quality Sample

Well, if you're going to do it right, you'd better do it right. If you've read the reviews in the *Hacker* over the years, you'll find out that there's a minimum that people expect when they're buying from a third-party company. Like patch selects, normalization, tuning, etc. And the majority of companies don't provide those things. You'll find many appreciative (read "return") customers if you fully-blow your samples, that is, make them as useful and versatile as possible. Here's a partial list of the areas you might concentrate on:

- Good velocity-sensitivity
- Memory-efficiency
- Good feel to the keys
- Patch selects, Aftertouch
- Versatile mod-wheel (not just vibrato)
- Accurate across the keyboard
- Normalized for volume
- Not overdriven (16-Plus or ASR-10)
- Custom effects programming
- Minimum layers for good polyphony
- Velocity-layers if needed
- Availability for 88-note board

When you sample, get the hottest signal you can get without clipping. EQ it properly and multisample it. The two areas I've seen lacking in commercially-available samples are fast response to the keys, wasted memory, inconsistency across the keyboard, and no patch selects. You'll find that these things make all the difference in the world.

Documentation, Copying, Printing, and Shipping

A manual helps. Good documentation makes the customer feel more at ease and confident with what you sold him. Let him know how to work your product because possibly he's not going to see the immediate application himself. What may be very obvious to you, frequently is not so to others. For example, we just put out a pedal steel sample that was dependent on patch selects for it to sound right. If we hadn't documented it, people would have only gotten half of what they bought. Again, don't assume that your customer either knows how to use what you're selling or even that it's his job to find out. It's your job to make the application clear.

Disk-copying — oh, what a subject! That alone is the most time-consuming effort of all. My original EPS had to have the most disk-operating hours of all of them! You can get

bulk disks by the hundreds (two good sources are Midwestern Diskette: 1-800-221-6332 (they have yellow disks!), or MEI/ Micro Center: 1-800-634-3478). You can use your own EPS, or use Giebler Enterprise's Ensoniq Disk Manager for the IBM-PC or ProCopy for the Atari. Don't underestimate the time-commitment here. If you want to get the product out to the customer quickly, you have to stay on top of it.

Having a computer helps tremendously in the design and the manufacture of disk labels (Avery form 5196), the production of catalogs and manuals, the creation of advertising, and the keeping of a good mail list. I use Aldus PageMaker, which can pretty much do anything as far as layout goes. As was mentioned in the previous article of this series, doing things in-house (especially printing) can save you lots of money.

For shipping, I have found Jiffy-Pak bags to be very effective for protecting disks (Associated Bag: 1-800-926-6100). Most of the time, I send stuff U.S. Mail. I accept personal checks, and believe it or not, I have not had a check bounce on me yet! As soon as I start having problems, then maybe I'll change my policies. And CODs are easy to handle. In fact, they wind up to be better for me, because I can charge an extra handling fee and I don't have to pay the VISA or Mastercard discount if they used their credit card. Ah, yes, let's talk about credit cards.

The VISA/Mastercard Account

With banks really tightening their belts these days, it is very difficult for a mail-order company to obtain a Merchant Account from a bank. What this lets you do is accept a person's VISA or Mastercard as a form of payment. 90% of my customers pay this way now, so in looking back, I would say that it is very important.

To convince a commercial banker that he should grant you such an account, you're gonna have to do some preparation. Get all your promotional materials, put them in one folder, write up a cover sheet that details how much money you expect to draw on the account. Copy off all your prior advertising, to show the banker that you're serious about your business, and show what your plans for the future are.

The next step is to find a commercial bank. There are plenty of savings and loans, but they can't help you. The only banks that carry Merchant Accounts are the big ones with commercial charters. Look in your phone book. Call their Bankcard departments, and ask them how you can open an account up. Now, most banks will tell you that you should send your application in, and they'll take care of it. Go ahead and do that, but also go down to a local branch and find a personal banker to talk with and show them what you want and ask if they'll go to bat for you. Be prepared to accept a high discount rate (what the bank subtracts off each sale for the privilege of accepting the card). It took me several months to get mine.

Business Ethics

This may be somewhat off the subject, but I have to tell a story that illustrates on how a company should not be run. There was a company a couple of years ago that advertised in the *Hacker* that promised 25 disks of sounds for only $99. Back then, and even now, that was a good deal. But if you could understand what the ad really said, it actually contained 25 disks worth of sounds on 4 floppy disks. I went out and bought the sounds, expecting to see 25 disks in my mailbox. When I got them I was pretty surprised. I checked the disks out anyway, hated the sounds (they were all short-memory sounds, which I was not interested in, and they were cheaply done), and then looked at the ad again. Ah... I had been ripped off! So I sent the disks back (there was no phone number listed in the ad) with a letter explaining that what I bought was not what I really wanted, and that I wanted a refund. You would not believe what I got back — a letter explaining that the company refused to give refunds, and then accused me of copying the disks! They said that they were able to know whether I put the disks into my machine or not (which is impossible) and that I had done that. So I was out $103 (they charged $3 for S+H). You may think that mail-order fraud exists only to rip off gullible people, but it has happened in the pages of the *Hacker!*

Think of the customer. The America Dream of owning a business doesn't mean taking advantage of people, it means scratching someone else's back and working on them to scratch yours. That will make your business successful, because it's based on the principle of mutual satisfaction.

This can also extend to listening to your customer's complaints. If they think something's wrong, they're usually right. If fact, they're always right. If you want another sale from them, oblige them and try to do something about it. Over the years, return business has been vital to the success of my company. Check this out — 50% of my business is return business. Given that figure I get the impression that it is important to please the customer. If they're not coming back, I would have had half the sales.

I wish you best success in your venture — it can be risky, but most of the fun is the challenge. Call me up if you have any particular questions; I'm happy to share most of what I know with you. 'Til next time... ▬

Bio: Garth Hjelte is the owner of Rubber Chicken Software Co., where all the food they eat is fried.

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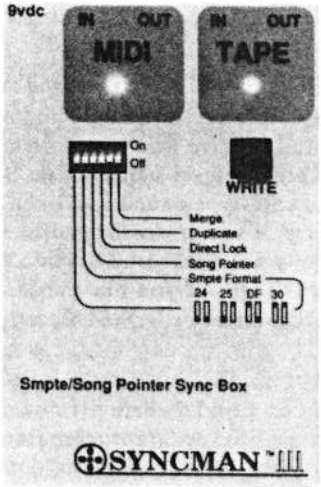

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Prog: Jungleflute 02

By: Walter Cooper, Latter Sounds

Notes: Jungleflute 02 adds tropical flavor to music, whether it's the deep dark jungles of Africa or the lush islands of the Carribean. Pressure adds a breathy vibrato. The modwheel dampens the reverb to create presence.

WAVE	1	2	3
Select Voice	On	On	Off
Wave Class	Breath	Breath	
Wave	ChiffFlute	ChiffFlute	
Delay Time	001	000	
Wave Direction	Forward	Forward	
Start Index	00	00	
MODSCR	Off	Off	
MODAMT	-	-	
Restrk Decay	00	00	

PITCH	1	2	3
Octave	0	0	
Semitone	00	00	
Fine	-02	+04	
ENV1	00	00	
LFO	+01	+02	
MODSCR	Press	Press	
MODAMT	00	00	
KBD Ptch Track	On	On	
Glide	Off	Off	
Glide Time	00	00	

ENV1	1	2	3
Initial			
Peak			
Break			
Sustain			
Attack			
Decay 1			
Decay 2			
Release			
Vel-Level			
Vel-Attack			
Vel Curve			
Mode			
KBD Track			

LFO	1	2	3
LFO Speed	31	31	
Noise Rate	00	00	
Level	16	16	
Delay	53	53	
MODSRC	Press	Press	
Wave	Sine	Sine	
Restart	On	On	

FILTER	1	2	3
Filter 1	2Lo	3Lo	
Filter 2	2Hi	1Hi	
FC1 Cutoff	055	055	
ENV 2	99	99	
FC1 KBD	+19	+22	
MODSCR	LFO	LFO	
MODAMT	+9	+19	
FC2 Cutoff	000	000	
ENV2	+44	00	
FC2 KBD	00	00	
FC1MOD-FC2	On	On	

ENV2	1	2	3
Initial	00	99	
Peak	99	99	
Break	86	29	
Sustain	58	00	
Attack	10	00	
Decay 1	30	41	
Decay 2	41	49	
Release	22	20	
Vel-Level	66	99	
Vel-Attack	59	00	
Vel Curve	Concave	Convex	
Mode	Normal	Normal	
KBD Track	00	00	

AMP	1	2	3
Initial	45	90	
Peak	99	99	
Break	70	83	
Sustain	62	78	
Attack	03	00	
Decay 1	50	44	
Decay 2	34	47	
Release	14	14	
Vel-Level	00	26	
Vel-Attack	06	99	
Vel Curve	Convex	Q-rise	
Mode	Normal	Normal	
KBD Track	00	+14	

OUTPUT	1	2	3
VOL	90	90	
Boost	Off	Off	
MODSRC	LFO	LFO	
MODAMT	+06	+07	
KBD Scale	00	00	
Key Range	-	-	
Output Bus	FX1	FX1	
Priority	Med	Med	
Pan	00	00	
Vel window	000	000	

EFFECTS — FLANGER & REVERB 2

FX-1	30	Flange Level	53
FX-2	30	Input Invert	Off
Decay Time	26	MOD (Dest)	FX1-Mix
HF Damping	40	BY (MODSRC)	???
Flange Rate	20	MODAMT	-20
Flange Depth	50		
Flange Center	00		
Feedback	00		

The Hack: After I entered this patch, I played it for a fellow player... a minor disagreement ensued. He felt the patch was more effective as a pad, so why not let it "sustain" a bit using different release values. I, on the other side, heard Jungle Flute as a solo-type sound and liked the original parameters. Not to worry; if you prefer the pad-like releases, for one or both voices, simply go to the Amp Section and change the Envelope MODE to FINISH... If you like the sound of the Envelope as is, let the MODE retain its NORMAL setting.

I feel the DELAY time is a little long in the LFO Section. For Voices 1 and 2, bring it down to 40. In the Effects Section, change FX-1 to 38 for more Reverb. The "Flange" part of this effect seems not to be quite dominant enough. Go to FLANGE CENTER and give it a value of 05. Using this effect, you can easily add more edge or breath to this sound. Adjust FEEDBACK to -78. (This will sharpen the high end.) Finally, those without SQ-2s or pressure sensing controllers, please remember to assign different MODSRC's wherever PRESSURE appears. A nice patch.

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.

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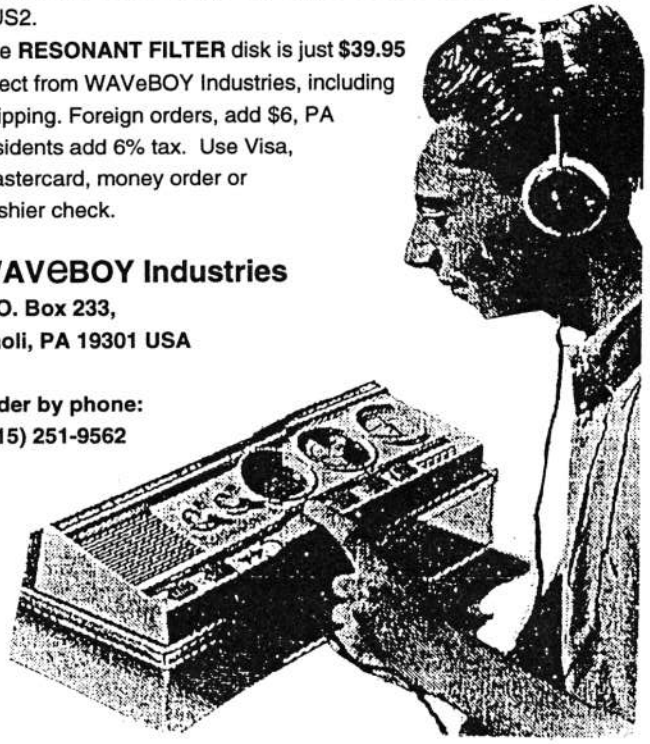

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ESQ & SQ-80 Hackerpatch — *Guest Hacker: Tom Shear*

ESQ-1/SQ-80 PROG: CP-80 **BY: Tom Shear**

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	00	01	PIANO	*OFF*	-	*OFF*	-
OSC 2	-1	00	00	PIANO	*OFF*	-	*OFF*	-
OSC 3	-1	00	05	BASS	*OFF*	-	*OFF*	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	*OFF*	-	*OFF*	-
DCA 2	63	ON	*OFF*	-	*OFF*	-
DCA 3	63	ON	*OFF*	-	*OFF*	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	28	00	23	ENV3	+63	WHEEL	-24

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	*OFF*	-

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	-	-	-	-	-	-	-	-
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	63	21	06	32L	00	00	29	32	37	15
ENV 4	63	43	00	21L	00	00	50	63	32	26

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	00	OFF	ON	OFF	OFF

SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
OFF	-	OFF	-	OFF	-	-

ESQ-1/SQ-80 PROG: CP-80

The Patch

One of my favorite acoustic/electric hybrid pianos. It has a lot more body and fullness than most I've heard.

The Hack

The addition of OSC 3 playing a BASS wave is what gives this sound more body than a lot of piano sounds. It also adds some hi-frequency sparkle that defines the sound nicely. The slight detuning between OSC 1 & 2 (a FINE value of only 1) is ideal for emulating the way a piano's three strings per key chorus naturally. Increasing this number can give less realistic, but fuller sounds. This sound is great layered with a good, full pad sound! Advancing the mod wheel gives a darker, muted tone. Try changing OSC3's WAVE to BELL, SYNTH2, BASS 2, GRIT 3, STRING, BELL 2, BREATH, and VOICE3 for varying amounts of bell in the tone.

SD & VFX Prog:QUEST

By:Walter Cooper, Latter Sound Productions

NOTES: QUEST is one of those filmscape textures with lots of bell trills. Velocity controls the bell sweep. It is from Latter Sound's Vol. 1 of VFX patches.

THE HACK: I love this type of patch - one with lots of sonic diversity when even a single note is played. The wide-ranging tuning - the low BUBBAWAVE coupled with the high ESQBELL - makes QUEST a little weird at the extreme ends of the keyboard, but the width of the sound is worth the tradeoff. I found the bell (Voice 2) a bit too loud and too static, so I turned the Output VOLume to 57, then added some LFO to the pitch (Pitch Mod page, LFO=+03). I tweaked the LFO RATE to 35 and the DELAY to 58. The static, rather extreme panning was the final rough spot for me. Since ENV1 is unused, I set it up with the Default SLOW LFO envelope (do this by going to the ENV 1 page, then pressing Copy) to work some stereo motion on Voices 1 and 2. Put this into effect by going to the second Output page, setting the panning MODSRC to ENV 1, and the MODAMT to +99 for Voice 1 and to -99 for Voice 2. Hit the Compare button and see what a great difference these subtle changes make.

– Sam Mims

WAVES	1	2	3	4	5	6
Wave	Strings	ESQBellX	BubbaWv	ESQBellX	ESQBellX	PianoVar
Wave Class	StringSnd	Transwave	Waveform	Transwave	Transwave	StringSnd
Delay	0	2	0	0	0	0
Direction	Forward	-	-	-	-	Forward
Start	0	50	-	50	50	0
Vel Start Mod	0	-	-	-	-	0
MODSRC	-	Mixer	-	LFO	LFO	-
MODAMT	-	+88	-	+88	+88	-

MOD MIXER	1	2	3	4	5	6
SRC-1	-	Timbr	-	-	-	-
SRC-2	-	LFO	-	-	-	-
SRC-2 Scale	-	0.1	-	-	-	-
SRC-2 Shape	-	Linear	-	-	-	-

PITCH	1	2	3	4	5	6
Octave	+1	+1	-1	0	0	+1
Semitone	0	0	0	0	0	0
Fine	0	+9	0	0	0	+9
Pitch Table	System	System	System	System	System	System

PITCH MODS	1	2	3	4	5	6
MODSRC	Off	Off	Off	Off	Off	Off
MODAMT	-	-	-	-	-	-
Glide	None	None	None	None	None	None
ENV1	0	0	0	0	0	0
LFO1	0	0	0	0	0	0

FILTER 1	1	2	3	4	5	6
Mode	3LP	3LP	3LP	3LP	3LP	3LP
Cutoff	77	77	58	77	77	77
KBD	0	0	0	0	0	0
MODSRC	Veloc	Veloc	Press	Veloc	Veloc	Veloc
MODAMT	+53	+53	+92	+53	+53	+53
ENV2	0	0	+11	0	0	0

FILTER 2	1	2	3	4	5	6
Mode	1HP	1HP	1HP	1HP	1HP	1HP
Cutoff	0	0	0	0	0	0
KBD	0	0	0	0	0	0
MODSRC	Off	Off	Timbr	Off	Off	Off
MODAMT	-	-	+75	-	-	-
ENV2	0	0	0	0	0	0

OUTPUT	1	2	3	4	5	6
VOL	72	72	79	92	92	78
MODSRC	Off	Off	Off	Off	Off	Off
MODAMT	-	-	-	-	-	-
KBD Scale	0	0	0	0	0	0
LO/HI Key	A0/A0	A0/A0	A0/A0	A0/A0	A0/A0	A0/A0
Dest Bus	FX2	FX2	FX1	Dry	Dry	Dry
Pan	0	99	50	55	64	54
MODSRC	Off	Off	Off	Off	Off	Off
MODAMT	-	-	-	-	-	-
Pre-Gain	Off	Off	Off	Off	Off	Off
Voice Prior	Medium	Medium	Medium	Medium	Medium	Medium
Vel Thresh	0	0	0	0	0	0

LFO	1	2	3	4	5	6
Rate	17	17	-	17	17	17
MODSRC	*Off*	*Off*	-	*Off*	*Off*	*Off*
MODAMT	-	-	-	-	-	-
Level	43	43	-	43	43	43
MODSRC	Wheel	Wheel	-	Wheel	Wheel	Wheel
Delay	0	0	-	0	0	0
Waveshape	Triangle	Triangle	-	Triangle	Triangle	Triangle
Restart	Off	Off	-	Off	Off	Off
Noise SRC RT	-	-	-	-	-	-

SELECT VOICE						
00	1	2	3			
0*	1	2		4		
*0		2	3	4	5	
**			3			6

ENV1	1	2	3	4	5	6
Initial	-	-	-	-	-	-
Peak	-	-	-	-	-	-
Break 1	-	-	-	-	-	-
Break 2	-	-	-	-	-	-
Sustain	-	-	-	-	-	-
Attack	-	-	-	-	-	-
Decay 1	-	-	-	-	-	-
Decay 2	-	-	-	-	-	-
Decay 3	-	-	-	-	-	-
Release	-	-	-	-	-	-
KBD Track	-	-	-	-	-	-
Vel Curve	-	-	-	-	-	-
Mode	-	-	-	-	-	-
Vel-Level	-	-	-	-	-	-
Vel-Attack	-	-	-	-	-	-

ENV2	1	2	3	4	5	6
Initial	-	-	0	-	-	-
Peak	-	-	99	-	-	-
Break 1	-	-	85	-	-	-
Break 2	-	-	64	-	-	-
Sustain	-	-	27	-	-	-
Attack	-	-	47	-	-	-
Decay 1	-	-	44	-	-	-
Decay 2	-	-	35	-	-	-
Decay 3	-	-	32	-	-	-
Release	-	-	48*	-	-	-
KBD Track	-	-	0	-	-	-
Vel Curve	-	-	Cnvx2	-	-	-
Mode	-	-	Norm	-	-	-
Vel-Level	-	-	46	-	-	-
Vel-Attack	-	-	0	-	-	-

ENV3	1	2	3	4	5	6
Initial	99	99	79	99	99	99
Peak	77	77	99	77	77	77
Break 1	59	59	88	59	59	59
Break 2	86	86	88	86	86	86
Sustain	83	83	87	83	83	83
Attack	39	39	35	39	39	39
Decay 1	37	37	56	37	37	37
Decay 2	47	47	33	47	47	47
Decay 3	41	41	0	41	41	41
Release	48*	48*	50*	48*	48*	48*
KBD Track	0	0	0	0	0	0
Vel Curve	Cnvx1	Cnvx1	Cnvx2	Cnvx1	Cnvx1	Cnvx1
Mode	Norm	Norm	Norm	Norm	Norm	Norm
Vel-Level	22	22	10	22	22	22
Vel-Attack	0	0	0	0	0	0

PGM CONTROL	
Pitch Table	Off
Bend Range	**
Delay	x4
Restrike	18
Glide Time	0

EFFECTS (1)	
Effect	Chorus & Reverb 1
Decay	80
FX1 Mix	50
FX2 Mix	50

EFFECTS (2)	
Rate	20
Depth	19
Delay	20
Rate Mod	+25
Depth Mod	+25
Mix	65

EFFECTS (3)	
Waveshape	Sine
MODSRC	Mod Wheel
HF Cut	Off

PERFORMANCE	
Timbre	0
Release	0
Pressure	Key

Classifieds

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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.

Dear TH, Clark, et.al.,

First, let me add my congratulations on such a fine magazine! I'm a high school music teacher and not only do I base some of my lessons in my Electronic/Computer Music course on articles in the *Hacker*, but I've given a few back issues to our economics teacher to use in showing how good communications between supplier (Ensoniq), and customers through a viable, easy to digest interface (TH) makes for happy campers and increased sales all around!

Second: Clark, I know that you can't make lots of brand-specific suggestions in this column, but... I'm looking for suggestions on software or books that make the teaching of sampling and sequencing easy enough for teenagers to understand, to use in the above-mentioned class. I've checked the Mix Bookshelf but am loathe to spend the $$ on books for which I've only read a two-sentence description. I use an **EPS-16+** w/memory expander, a PC with Roland SCC-1 card/MIDI interface, TAP's MusicPrinter 4.1 and a variety of other sequencing and composition programs on the PC.

Third: As a guy who loves the electronic music medium but as a teacher who has almost NO time to tweak, I loved the article a couple of months back that showed how to take two factory sounds for the 16+ and tweak them into something else entirely! I'd like to see more articles or EPS-16+ Hacker Patches along those lines.

I'm also interested in hearing from other music teachers utilizing Ensoniq equipment in school applications. Please write or E-Mail me at the addresses below.

Sincerely,
Tim Thomas
c/o The Orme School
H.C. 63, Box 3040
Mayer, Arizona 86333
Internet (via America On Line): timmusik@aol.com.

[CS – Actually, I'm not at all opposed to making brand-specific suggestions if I feel the product is a good one. However, my experience with sample editing is pretty much limited to Macintosh-based software, so I'm afraid I can't be of much help. I have heard some good things about a sample-editor from Turtle Beach. They can be reached at (717) 843-6916. It might be worth looking into. Otherwise, maybe someone at Ensoniq or one of our readers will have a recommendation or two to make.]

Hey TH,

Are you guys still out there? When I bought my **EPS** several years back, I got a copy of TH dated Nov, 1989. Anyway, I just wondered if there was anyone left out there who might know a little bit about the EPS OS disk layouts. I talked with Alan Smith at Ensoniq a while back, and he said he was planning to do the documentation, but not to hold my breath.

Ensoniq was kind enough to send me, free of charge, their External Command Specification document which pretty much describes the layout of things as they look in memory, and they tell me that this stuff looks similar on disk, which it appears to. Man do they ever have a weird way of doing things! I have written a sector editor which allows you to modify the EPS disk with an IBM PC, and programs to read and write EPS disks to and from a binary file on the PC hard drive. Also I've written code to compare a file with a disk, which allows slow and painful reverse engineering of the OS by changing one parameter at a time, and seeing which bytes change on the disk. I had hoped eventually to make a point and click interface for the PC to allow creation of a custom OS disk and wave editing, etc... It's been a few years since I worked on this, and I'm getting back into it now, but I thought I'd see if anybody else out there might've designed this wheel already! If not, anyone who's interested in seeing the results or helping with the project are welcome to respond!

PS: I must credit Gregg Lentz of Litchfield, MN. I didn't even know it was possible to read an EPS disk with a PC until I talked to him sometime back.

Cliff Hall
Rt 2 Box 369
Johnson City, TN 37605
(615)/928-6585
Compuserve: 75310,3013

[TH – Yup, we're still here. The guy you want to contact is Gary Giebler at 315-652-5741. He did an article for us a while back on disk formats for the various Ensoniq gear and he's presently selling disk utilities for said gear that runs under DOS.]

Dear Sir/Ma'am,

How about an article or series of articles on panning, volume and effects? In other words, how do various groups or producers use these tools?

Which instruments are generally panned left, right, middle? Which instruments are generally out front and which are usually more hidden? Which effects are generally used with which instruments and in what amounts?

I used the word "generally" several times because I realize different types of music will feature their own styles (even different songs of one type will vary). But I imagine groups as well as producers have a starting point from which they begin.

Fred Bass
Worcester, Mass.

[CS – The subject of spatial placement in a mix is a rather broad one, involving not only panning issues, but processing as well. Whereas early stereo mixes often simply had some instruments playing out the right speaker and the others out the left, modern technology allows us to place individual sounds pretty much anywhere in any number of simulated three-dimensional spaces.

I agree that articles addressing these issues could be most helpful, and I'd love to see this type of thing in these pages. In the meantime, you might want to take a look at any of the recording-specific magazines out there – Mix, *for example, or* Recording Engineer/Producer.*]*

Dear Hacker,

I'm having a rather confusing problem with my **SD-1.** I can't get it to transmit MIDI control parameter #10 (panning) to any of my external synths. The MIDI implementation chart in the manual states that the SD-1 recognizes and transmits controller #10 but whenever I attempt to send this data (using the Pan button in the performance section) it seems to send control #71 (timbre) instead. I have all the correct MIDI channels, etc. set properly. What gives? If this is a bug, is Ensoniq working on an OS update to correct it? And, if not, what am I doing wrong?

Thanks for your expertise,
Michael Mooney
Mt prospect, IL

[CS – The SD-1 isn't really set up to directly transmit controller #10 (pan) messages; as you've discovered, the data slider sends controller #7 (volume) messages. There might be a couple of things you could try, though.

The sequencer is fully capable of recording and playing back controller #10 messages. If you have something that can generate these messages (another synth that sends controller #10, a computer and appropriate software, a Lexicon LXP-1/5 programmer, etc.) you could probably use that device to overdub pan messages into the SD-1. You'll need to set the SD-1 XTRL to #10 (press the MIDI Control button to access the XTRL parameter) for the SD-1 to send and receive these messages.

If you simply want the SD-1 to control non-dynamic stereo placement of external sounds, you might consider inserting XTRL messages directly into your sequences in Event Edit mode. Once again, you'll need to make sure that XTRL is set to #10 from the MIDI Control page.]

[Ensoniq – With Operating System version 4.10 we added response to panning. You should check with your local dealer about getting a copy of it. If you are using an O.S. version earlier than 4.0 (which means that you have an original 21-voice SD-1) you will also need new ROM chips, in which case it is best to contact our Customer Service department (215) 647-3930 for more help.]

Dear Interface,

As an enthusiastic **EPS-M** owner I would like to have your reaction to two problems. First, I want to edit waveform data with my MS-DOS computer. Therefore, I want to be able to read EPS-M disks with the PC. I have sent two faxes to Giebler Enterprises which you wrote about in Issue #93, but I have not received any answer. Also, Ensoniq does not give me the information I need. Is there any software which makes it possible to manipulate waveform data with the PC? I am almost desperate.

The second problem is that sometimes, usually after recording a songtrack, the amount of memory blocks used for the song increases rapidly. Normally, song and sequence information takes about 60 blocks. But when this problem occurs I have had songs containing more than 1700 blocks! The only way to solve this is to save each sequence separately, erase all sequence data and load each sequence again and put them together into the song again. I have not the faintest idea what could be the cause of this problem or how to prevent it.

Sincerely yours,
Ruben Harry
The Netherlands

[CS – The problem you describe is a bug that has been corrected in newer OS releases (I believe). If you're not using OS 2.49, I'd suggest getting a copy from your dealer, or contacting Ensoniq Customer Service (215-647-3930).

As far as waveform editors goes, I can only reiterate what I told Tim Thomas (above); while I've had almost no direct experience with wave editors on the PC, you might check into the program from Turtle Beach.]

[TH – We passed your letter on to Giebler

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Enterprises and Gary Giebler replies, "On April 28th, (the same day we received your fax), we faxed our catalog and price list along with a cover letter and shipping information to the fax number you requested. We also would be happy to mail a copy of this information to you." Gary also mentioned the Giebler Enterprises doesn't have a dedicated line for fax only. With small businesses (including the Hacker) people should generally call before they fax something or else risk just faxing into somebody's ear or answering machine.]

[Ensoniq – Turtle Beach can be reached at (717) 843-6916.]

Dear Hacker,

First off, I know you hear quite often about how much we all like your newsletter, but I'd like to express my own appreciation. I feel like I've bought into an institution instead of a piece of gear.

Anyway, I own an **EPS-16+** and I've been having a few problems with it. Occasionally an instrument will randomly transpose itself while I'm playing it. I check both the root key page and the instrument transpose page and neither shows any transposition going on. I've checked controller assignments, the pitch envelope, everything, and none seem to be causing the problem. The weird thing is that when the sequencer plays the instrument, it plays without the transposition. Also, every once in a while sequences will randomly change tempo while they are playing. The tempo page doesn't show anything going on, it just shows the tempo staying where it should be. If I save the problem sequence, turn the machine off, and load everything back up again, it's fine. It's just a pain though, having to do that in the middle of recording. Now both these things happen completely at random. Does this mean the machine is just being quirky? If so, I thought the new O.S. was supposed to take care of quirks.

On another subject, please print more articles for the EPS, '16+, or ASR-10. It doesn't matter if I can put them to use right away, I love reading them. Even if it's about the most abstract thing I'll guarantee you at least one reader (me).

To Tom Shear: I'm sorry this is a bit late but thank you for the hackerpatch you made for the EPS. It's become quite a useful sound. If you ever feel like making another one, please do.

Now, one last thing. I'm not sure if this is an original idea because it seems like someone would have thought of this already, but, if not, I'd like to share this sample trick with y'all. I thought, instead of sampling a length of a waveform, why not just take one cycle and loop it. So I tried it. I took a sample, set the loop start and end points right next to each other, and set the sample start at the same place as the loop start (to make sure I was only getting the sound of the loop). What came out wasn't quite pretty (an understatement) but I moved the start and end times around until I got a workable waveform. Now all I had was a simple waveform but with filters, envelopes, and effects. Any decent synthesist could turn it into a cool

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sound. (By the way, if you try this, you'll probably have to tune the waveform to your other instruments because the pitch is almost always transposed.) So, anyway, after I finished tinkering with it I truncated the thing and was left with a cool sound that only took up 8 blocks! Cool sounds for small memory are certainly good things for those of us who can't upgrade to more than 3 megs. Even if you have an ASR-10 with 16 megs it's still fun if you're one of those who like to tinker. Also, one thing I'd like to add: if you leave some of the original sample on either side of the loop points, try modulating the loop position. This won't change the pitch of your looped sound but it'll change the timbre because you're cycling through different parts of the original waveform. So, if you haven't tried this before, jeez, go out and have some fun.

Joel Nelson,
Rohnert Park, CA

[CS – Joel, you've discovered the magic of short loops. Short loops, or single-cycle loops, are a snap to get, but there's a catch. Short loops usually work best on single-waveform samples – in other words, samples that are not chorused in any way. A single guitar note, a single electric piano note, a vocal note – all are good candidates for short loops. String sections, vocal choruses and 12 string guitar are all examples of sounds that won't sound right with short loops.

The idea behind single-cycle looping is to loop exactly one cycle of the sampled waveform. To make this easiest, auto-loop finding should be set to ON, (this is the default setting). Select the sample you wish to loop, and move to the top of the EPS's WAVE page, making sure that MODE=LOOP FORWARD. Next, cursor to the LOOP START page (or press 83 on the keypad), and set the loop start to an arbitrary point toward the middle of the wavesample, (around 50% of the way in). Cursor to the LOOP END page, coarse adjust. Grab the data slider and move it all the way down – this sets the loop end as close to the loop start as possible. Now select the loop end fine adjust (the number in the left of the display). Play a note on the keyboard, and press the UP arrow button until the loop is more-or-less in tune with the rest of the sample. You will probably need to press it no more than a couple of times to find a perfect loop (in most cases). With auto-loop finding on, each time you increment the loop end point, the EPS-16 Plus (or EPS, or ASR-10) is trying to find the next point in the waveform that contains a zero-crossing, and the waveform at the loop start and loop end points is in phase (traveling in the same direction). There are a couple of things that can go wrong, however. One is that the loop sounds okay, but it's not in tune with the rest of the sample. The other is that the loop is in tune, but it doesn't sound right – it sounds dirty or "ratty."

If the loop isn't in tune, but otherwise sounds okay, you may be able to fix it using the "Loop end real fine" adjustment – the number preceded by a decimal point on the loop end page. If the loop is flat, underline this parameter and press and hold the down arrow button – the loop will slowly (probably real slowly) rise in pitch. If you wish to tune the loop flat, hold the up arrow button. Sooner or later, your loop will reach the desired pitch.

If your loop's in tune, but it sounds ratty, then probably what's happened is that you've picked a loop that contains some wavedata that has an odd harmonic sticking out somewhere. This harmonic wouldn't normally cause you any trouble if the waveform weren't looped – it may play by so fast that you wouldn't notice it. But when you loop it, it begins repeating at the loop frequency (which in this case is your sample's fundamental frequency) and it can change the entire harmonic character of the sound during the loop. To remedy this, cursor over to the loop position page, underline the fine adjustment parameter, and use the UP/DOWN ARROW buttons to move the entire loop back and forth through the wavedata. You'll usually be able to find a good sounding loop in with a minimum of fuss this way.

While you're on the loop position page, you might also want to see how near the beginning of your sample the loop can be placed; simply underline the loop position (percentage) number, and move the data slider down. There are a couple of advantages to having your loop near the sample's start point. The most obvious is that the closer you can get to the sample start point, the more memory you can free up when you truncate the sample after the loop end point. The other advantage is that most samples are brighter near the attack portion of the sound. As you move the loop position nearer to the sample's start point, you'll notice it getting both brighter and louder, particularly if the original sample is of a percussive source, such as guitar, bass, piano, etc. If you can loop the sound near its beginning, you'll be getting a more efficient use of the EPS-16 Plus' dynamic range (the sound is louder), and a bright sound can be filtered if you want it more mellow sounding. If you can get a really bright loop on an electric piano sample, for example, you can filter the sound and then use velocity or an envelope to control filter cutoff, and set it up so that the sample is at full brightness only on the hardest keystrokes – in much the same way that a real electric piano sound is brighter when played harder.

As far as random transposition of EPS-16 Plus instruments goes, that's a new one on me. I'd recommend a call to Ensoniq Customer Service (215-647-3930); what you describe is definitely not normal.]

[TH – Sampler owners might also want to check out the article "Miragefreq" in issues 94 and 95. It describes a program that sets a synth to produce just the right pitch so that these "short loops" work out

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EPS-M	2.49/2.41
EPS-16 PLUS	1.3/1.00F
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MIRAGE	3.2
ESQ	3.5
ESQ-M	1.2
SQ-80	1.8
VFX	2.30
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KS-32	3.00
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just right for your sampling rate. It's written for the Mirage, but we're sure other sampler hackers can make use of it.]

[Ensoniq – Your problem should not be written off as the EPS-16 PLUS "being quirky." Please contact Customer Service so we can help you get to the root (no pun intended) of the problem.]

To the Hacker:

An open letter to Ensoniq: With technology changing at a *very rapid* pace, users are looking for a viable "upgrade path."

One great thing about the PC computer platform is that when your motherboard becomes obsolete you can turf it and buy a new one at a savings of over 50% compared to buying a whole new computer.

With spending money being tighter these days, I would expect there to be a huge crowd of people looking for a way to safeguard their next $3000 keyboard investment (me for one). I am looking very carefully before spending another dime on equipment.

To satisfy us cautious spenders and get a bunch more people onboard your platform I would suggest you make a *viable upgrade path* for Ensoniq products.

I know this opens another can of worms, i.e., returns to the factory, etc. But with some careful planning and *modular* thinking, the Ensoniq of today could become the Keyboard Hardware Standard of the future, making your proprietary O.S. releases (i.e., the way that Apple calls the shots on their own platforms) the jewels everyone goes after.

I and many others would gladly re-climb onboard the Ensoniq Train if it offered us a way to beat the upgrade treadmill. Let me pay for new motherboards, power supplies, floppy drives, even software updates, but give me an upgrade path that helps me stay state of the art without re-mortgaging the house every three years.

I know Ensoniq used to offer a lot of bang for the buck but some of the competition is looking pretty far ahead these days – a genuine upgrade path is what will make me open my wallet again.

Best regards,
Orion Engar
Dorion Research Corp.

[CS – I'm sure Ensoniq will have something to say on the subject, but I just have to jump in here. Haven't you noticed that Ensoniq HAS made upgrades available for VFXs, SDs, and SQs? As nearly as I can tell, Ensoniq is evolving their products into more modular instruments that can be more easily upgraded. How many other electronic instrument manufacturers do you know that offer hardware upgrades for their earlier products?

In an ideal world, any technology one might purchase would be easily and inexpensively upgraded, and while I think Ensoniq is moving toward that goal, I don't think it's always possible to turn last year's model into next year's; at some point the basic hardware has to change. And it could be worse. Talk to anyone who bought an Apple IIvx computer before it was discontinued.]

[Ensoniq – As Clark pointed out we have offered a number of upgrades over the last 4-5 years. And with the sharing of sounds within our products (EPS reading the Mirage disks, SQ and KS sharing sounds, TS-10 reading our sample libraries) we have tried to cross-pollinate our technologies wherever possible. But it is not always possible to offer even mainboard swaps, as design changes on the mainboard may also dictate changes in other components. Different display technologies, storage mediums, and better fidelity analog and digital components can all force changes that can not economically be covered by an upgrade program.

We recognize the advantages for our users of upgrade options and will certainly consider them in the design of new products, but we don't believe that it is a good idea to stop advancing our technologies and product capabilities because the new designs cannot be easily upgraded to. Thanks for the comments!]

Dear T. Hacker,

I have an **EPS-16+** and have enjoyed using it for almost two years. It has proven itself time and time again as the workhorse for my band but it has let us down in one area. The problem is that I was wanting to take advantage of the '16+ "distortion guitar" and similar sounds in a live performance situation and play them via a Yamaha KX-5 MIDI controller. The KX-5 is a strap-on (over the shoulder) unit which gives me freedom to move around on stage. When I link it up to the EPS-16+ via MIDI cable and turn on the KX-5 (EPS-16+ has already been booted up), the EPS crashes with a "Reboot" 141. I checked out my cables and they are good. The KX-5 has no problem with my other synths and sound modules. So what's the problem???

Hacked off,
Spore Virus, N2O
Atlanta, GA

[CS – The problem you describe is something I've not heard of before. If you have some sort of MIDI Monitor (such as the excellent MIDIScope for the Macintosh, available for free on many online services) you might want to check out what's coming out of the KX-5 MIDI out. Some-

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thing in the data stream might be confusing the EPS-16 Plus. Otherwise, I think your best bet is to contact Ensoniq Customer Service at 215-647-3930.]

[Ensoniq – We are familiar with your problem with the KX-5. Basically, when the KX-5 is first turned on it sends out a dense stream of MIDI data (controllers, resets etc.) that overloads the MIDI input buffer of the EPS-16 PLUS.

There is an easy workaround for you. The KX-5 can transmit on either MIDI channel 1 or 2. You could set up your EPS-16 PLUS to receive on MIDI channel 2, so when you turn on the KX-5 the MIDI data it generates going out on channel 1 will be ignored by the EPS-16 PLUS. Then set your KX-5 to send on MIDI channel 2 and you're ready to play.]

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