Transoniq Hacker

The Independent News Magazine for Ensoniq Users

WAVeBOY's *Audio-In Effects Disk* for the EPS

Another Unauthorized Break-In

Craig Anderton

For: EPS-16 PLUS.
Product: *Audio-In Effects Disk 1.0*.
Price: $39.95.
From: Waveboy Industries, PO Box 233, Paoli, PA 19301, (215) 251-9562.

This follow-up to the ultra-cool *Parallel Effects Disk* (or PED, reviewed in *Hacker* Issue #82) continues the Waveboy tradition of multiplying EPS-16 PLUS power for cheap. The *Audio-In Effects Disk* (AIE) contains several algorithms which, once loaded from disk, give you the option to route any instrument plugged into the EPS-16 PLUS sampling audio input jack through the internal effects via Bus 1.

But that's not all; you can do vocal harmonies a la DigiTech Vocalist, change the pitch of a sampled loop in the EPS without changing the tempo, or change the tempo without changing the pitch. None of this interferes with standard EPS operation, so any instruments you have loaded can still feed busses 2 and 3 if you want effects. Impressive, eh?

About the AIE

The package consists of a concise manual, along with a single EPS floppy disk containing 21 effects files and the latest EPS-16 PLUS operating system (1.3). 13 effects are identical to the original EPS algorithms, but include the audio in option. Another five are new effects (one is a plate reverb that doesn't have audio in), and there are three parallel effects that are offshoots from the *Parallel Effects Disk*. Two of these have the audio in feature. Finally, there are three instrument files, a song file, and bank file that loads a demo of the Time-Dicer effect (more on this later).

Using the AIE is easy: you load from the EPS 1.3 operating system, plug your instrument of choice into the audio in, load the desired effect from disk (it becomes the bank effect), and go. The manual follows in the PED tradition — it's for people who want to get started without going through a lot of excess verbiage, yet all the information you need is pretty much there. (By the way, if you lose the manual and don't know how to get in touch with Waveboy, scroll through the parallel effects parameters and you'll find the address and phone number).

Since you can sometimes hear clicks and pops when loading new effects, it's prob-

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ably a good idea to lower the volume before you press Enter. Also, you should spend some time determining the proper settings for both the EPS input and source output levels to avoid distortion (unless that's an effect you want).

If you have a problem hearing the sounds of instrument loaded into the EPS, don't panic; any instruments feeding Bus 1 won't be heard since that bus is dedicated to the audio in. So, reprogram any instruments to Bus 2 or 3 if needed.

About the Algorithms

Most of the algorithms are self-explanatory if you're familiar with the EPS-16 PLUS effects, and there's the usual collection of tweakable parameters. However, there are a couple of effects making their debut on this disk that require further explanation.

The Time-Dicer+ algorithm is a pitch shifter, but don't expect an Eventide H3000. Most pitch shifters color the sound, and this one is no exception. However, there are enough parameters and options that you can make some truly fabulous sci-fi sounds as well as do the normal octave above/below type effects. If you like ring modulators and think tape distortion is one of analog tape's assets and not drawbacks, you'll get along just fine with the Time-Dicer.

The 3V Harmony algorithm generates three-part harmonies from the input signal. One simple application is to play a single note melody into the EPS audio in, and use the EPS keyboard to specify the chord type (major, minor, 7th, etc., all of which are referenced to middle C). The input signal will appear in glorious three-part harmony. For example, if you have C major held down on the EPS, singing F gives you F major, B give you B major, etc. If you hold down C minor, singing F gives F minor, B gives B minor, and so on.

Voices will not steal from keys that are held down, so if you're holding down a major chord and want to add a 7th, you'll have to let up on one of the notes before you play the 7th.

If you're a vocalist, you can sequence a series of chords into the EPS, and as you sing along with it, have your voice turn into three-part harmony. This is conceptually similar to DigiTech's Vocalist, although the fidelity of the dedicated DigiTech box is superior. Those with minimal music technique can step time a chord progression into a sequencer, then bang on just one note to create chords (all you need is rhythm).

Applications and Bugs

One of the most interesting Time Dicer applications is changing a looped, rhythmic sample's pitch without changing the tempo. You can also alter the tempo without changing the pitch, although this requires a more drastic compromise in terms of signal quality. Again, don't expect super high-fidelity — but you can partake of some useful as well as novel noises, especially when the algorithm is stretched to extremes. (By the way, altering the pitch bend changes the time a loop takes to complete, just like a normal sampler. Time or pitch is preserved only when transposing from the keyboard.)

I did run into two bugs (sometimes the two parallel effects with audio in wouldn't pass the input signal, and also, the AIE disk wouldn't boot from Flashbank) but I alerted Bill Mauchly, the program's author, who fixed both bugs before the review went into print. Those who already have the AIE disk and have experienced these problems should contact Waveboy about upgrading.

However, in the process of checking out the Waveboy disk, I did find an EPS bug: it's possible to crash the EPS and bring up the dreaded Error 129 message by pressing Edit, Effects, then holding down the left arrow button and stepping from screen to screen with the down arrow button (EPS power users often get into the habit of stepping through screens this way). Since this happened with the ROM as well as Waveboy effects, it seems very unlikely this is Waveboy's problem.

The Dynamic Duo

The PED and AIE disks complement each other. The PED is essential if you use the EPS multi-timbrally and want to have different effects on different instruments. Granted you can do this to a certain degree with a stock EPS (as explained in Ensoniq's latest *"Musical Perspective"* brochure, written by yours truly), but the PED trades off a bit of effects quality for a lot more versatility, and it's worth it.

The AIE is a combination utility ("gee, sure wish I had one more decent reverb lying around for the background vocals") and creative tool — some of the time sliced and harmonized sounds are truly bizarre, yet not repelling. If you like industrial sounds, you'll love the kinds of noises the pitch shift-based algorithms can create. It can even perk up a guitar in a pinch with the distortion/chorus/reverb type algorithms. Finally, AIE also brings some DP/4 flavoring into the EPS-16 PLUS; if you've been interested in checking out a DP/4, this gives you a taste (as well as a hint of how effects work in the ASR-10).

From what I understand, the next disk in the series will add more synthesis functions to the EPS-16 PLUS. Based on Waveboy's track record, I'm looking forward to it already. In any event, Waveboy has done it again: come up with yet another nifty way to get more mileage out of your keyboard. That's not a bad idea in itself, but the execution is what makes this disk well worth the cost. ▬

Bio: Craig Anderton is a musician (ten recordings), author (eleven books), and lecturer. He is currently Editor-at-Large for Guitar Player *magazine, West Coast editor for EQ, and a regular contributor to* Keyboard, Pro Sound News, *and* Sound-On-Sound *magazines.*

Front Panel

RND (♪♫♪)

Hacker News

It was a noble experiment... (Maestro, a little back-peddalling music, please.) You've probably already noticed yet another change in our printing methods. After two months of panic and crises in learning how to run our own press in the midst of meeting a publication schedule, we've found another web-press printer who can print the *Hacker* for just a slightly higher cost than we can. Of course, there are always tradeoffs. In this case, our paper quality is down about 3db. We hope that you, our readers, are so tickled with our content that the paper is of little consequence. We've lost a little durability and "postal resistance," so be sure to let us know if your issue arrives damaged and we'll be glad to replace it. What you've gained is that your publisher gets to retain what's left of his sanity. At this point, we intend to keep the press for such non-schedule-dependent things as flyers and renewal notices. It's very risky for *anyone* to be relying on a single press to meet a publication schedule — it's just not that kind of critter. Maybe someday in the far distant, very dim future we may try for *Hacker* covers or something.

Transoniq-Net News: Rob Feiner has expanded his question-answering domain to include hard drive systems, studio and computer questions. He's also added his CompuServe address (71024,1255). Philip Magnotta has been added to help with SD-1 questions.

Ensoniq News

EPS/EPS-16 PLUS/ASR-10: After a couple of false starts we're pleased to announce the release of our first CD-ROM, *CDR-1* for the EPS-16 PLUS and ASR-10 samplers. *CDR-1* includes SLT-1 through 13, ESS-1 through 12 (*Signature Series*) and the *Essential Sounds* that were shipped with the EPS-16 PLUS. This is the equivalent of 181 floppy disks, which would have cost $1,388.75. By buying this one CD-ROM disk for only $399.95 you save almost $1000! The upcoming *CDR-2* will include SL-1 through 20 and ESS-13 through 20 (Signature Series), and will also cost only $399.95 – a savings of $1000.!

Other upcoming releases for the EPS/EPS-16 PLUS/ASR-10 samplers include: *SL-18*. An excellent collection of synth-oriented sounds, created for Ensoniq by Erech Swanston and Rob Feiner, of *Hacker* fame! Includes 5 disks and a sound manual. Suggested retail: $39.95. And, the *ESS-18 Jeff Lorber Signature Series*. We realize you have waited a while for this collection, and we're sorry for the delay. But when you hear these great sounds and drum loops crafted by one of LA's top producer/performers you'll forget the delay and start jamming! Includes 4 disks and a sound manual, suggested retail: $39.95.

KS-32/SQ Series Instruments: *EX-1* Sound card which features 160 new Sounds for any of the 32-Voice KS/SQ instruments. This new card utilizes the new 16-bit expansion waveforms and provides a broad range of imaginative and imitative sounds for your music. Suggested retail: $99.95. And the *PC-1*. A new concept in accessories for your KS-32, this card contain 70 Performance Presets which can be loaded into the KS-32, giving you pre-programmed splits, layers and sequence templates. Suggested retail: $99.95. A *PC-2* will be available in January for the SQ 32-Voice keyboards.

SD-1 32-Voice/SD-1/VFX-sd: We have released three more volumes of *TriviaToons* (from the Michael Ford Archives), each retailing for $24.95. Titles include *2001, Mission Impossible, Star Trek, Jeopardy, Honeymooners* and *Our Gang*.

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.

SD-1 Questions – Philip Magnotta, 401-467-4357, 4 – 10 pm 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, 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.

SQ-80 Questions – Michael Mortilla, 805-966-7252 weekends and after 5 pm Pacific Time.

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, (201) 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.

SD-1, sound programming, sequencing, & MIDI – Eric Olsen, Pegasus Sounds, (616) 676-0863. Mon, Tues, Thurs, Fri: 4 pm to 9:30 pm Eastern Time. Sat: 12 to 10 pm. (*No calls on Wednesday please!*)

SQ-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.

HYPERSONIQ
NEW PRODUCTS

Redshift Limited announces the availability of their SQ-80 patches as a three-volume set, the *PrivatLabel*TM Collection. The price of the set has been sharply reduced to $32, including shipping and handling. The 120 patches include few imitative sounds, no drum kits, and not one single sound effect! Instead, they concentrate on the strengths of the SQ-80 with an emphasis on musicality, timbral movement, and playability throughout the keyboard range. The collection is useful to musicians playing in styles ranging from hard rock to pop to New Age to cool jazz. The *PrivatLabel* Collection is available in either SQ-80 disk or Opcode GalaxyTM format. Extensive performance notes accompany the collection. For further information, contact: Redshift Limited, 4808 Hollow Corner Road, Suite 126, Culver City, CA 90230.

MIDI Mark Productions announces the arrival of its newest sampling CD — the *"Dance Construction Set #1."* The CD contains over 1,200 samples of drum loops, synths, basses, effects, vocal fx, and drums. Samples were chosen for their effectiveness in "New Jack, House, R&B, Techno and Hip Hop" music. There are over 130 drum loops made with drum machines or live drums and no rights reserved. An additional 60 Hip-Hop and New Jack drum loops do have rights reserved. This CD has already received rave reviews in England, N.Y., and by Los Angeles studio musicians. Price: $75, plus $3 s/h. Contact MIDI Mark Productions, P.O. Box 217, Whittier CA 90608. Phone: (310) 699-0095.

The Ensoniq DP/4 Review
Part II

Charles R. Fischer

As you may remember, back in Part 1 our heroes learned of an exciting new digital multi-effects processor that threatened to overturn the entire music industry's concept of what a multi-effects unit was capable of doing. This device, known to us as the Ensoniq DP/4 Parallel Effects Processor, has been known to garner rave reviews from the music press, while striking fear into the engineering staffs of competitors.

Now that we're back for the finale, we can finally get to the REAL important stuff — like how it sounds, what were its best- and worst-sounding effects, its MIDI implementation, and my overall opinion (if you haven't guessed already).

The Sounds

Sure, the features that we covered in Issue #88 are certainly noteworthy. However, they wouldn't really be worth very much if the audio quality was lackluster. If you've been following Ensoniq products for a while, you're probably aware that many people identified their stuff with the "good price/performance, lame sound" tag, (mostly due to the Mirage and ESQ-1). Maybe this was true a few years ago, but newer models like the KS-32 and EPS-16 Plus should have laid this to rest. But even I was surprised to discover that the DP/4 sounds far better than most signal processors in its price bracket — it sounds downright terrific!

I'm forced to admit that the DP/4 is one of the better sounding digital processors I've ever used. While it's not quite as clean as the Eventide H3000, and the reverbs aren't nearly as pristine as those on high-end units from AKG and Lexicon, they're damn good nonetheless (and considerably cheaper than these devices).

After having this thing around for a month, I've been able to pick out a few imperfections here and there, but most of these flaws were inoffensive or easily corrected. For example, it is possible for certain combinations of effects to get rather noisy. Fortunately, many of the effects that accentuate the noise (compression, distortion, amp emulators) have been thoughtfully equipped with noise gates, which can reduce the hiss to an inaudible level.

For my listening tests, I used three different MIDI instruments with the DP/4: an Oberheim Xpander, an Alesis D4 drum module, — and, surprise! my good ol' SQ-80, which was picked to see if the DP/4 could put any life into those sleepy 8-bit waves. As it turned out, the surprise was on me.

Not only did the SQ-80 and its characteristic grunge come alive with those sparkling effects, but it sounded so good that I began playing it again daily (something that has not happened in years). What was really scary was when I called up my tuning patch (a single-oscillator sound with no animation whatsoever), run through a chorus-or-pitch shifter and delay presets (that's only 2 units), and ended up with fat analog timbres similar to a Roland Juno in texture. While it would be pretty dumb to buy a DP/4 just to do that, I'm in awe of anything that can make that stupid patch sound great!

The Xpander and the D4 sounded fine, too, although it would be almost impossible to expect that after the SQ-80 miracle. For another approach, I had a couple of friends run their guitars through the various amplifier/speaker emulations (more on this subject soon). But first, we'll cover how I responded to the sound quality of the basic effects categories:

Reverbs/Delays

Let's face it, the reverb sounds are one of the most important effects to be found in any type of digital processing, period. And for the most part, the DP/4 does an excellent job at producing a wide variety of reverb and delay effects.

First, the reverbs. You'll find a healthy assortment of presets

dedicated to reverb and ambience effects in each configurations collection, which range from cliches to the truly bizarre. With ten basic algorithms (each having an assortment of parameters for tweaking), you've got an awful lot of stuff to work with. I especially liked the "plate" algorithm, which seemed to have a special airiness that meshed well with almost every sound I tried.

On the other hand, I never managed to figure out how to use some of the weirder ambiences that I tried (although I can't say that someone else couldn't). I did find that my favorite presets used two or more units in parallel or series to provide a smoother, more realistic sound. While the single-unit 'verbs aren't quite as spectacular, they're certainly more than good enough for most of us mortals.

The delay algorithms were especially crisp and clean. I found them to be universally wonderful. While most of the delay algorithms are usually combined with one or two other effects, they all managed to sound excellent to these ears. Sure, decent delays are pretty routine these days, but having a herd of programmable, sweet-sounding delays chained together can lead to all sorts of bizarre noises, especially when placed in feedback loops, series/parallel groupings, and other esoteric hookups. I went so far as to borrow an extra stereo amp and speakers, and spent an afternoon listening to echoes moving around the room in quadraphonic patterns — outrageous!

Chorusing/Flanging/Phasing

This group of familiar effects is done very well on the DP/4; the chorus and flanging presets usually impressed everyone. The phasers sound extremely smooth, even with lots of regeneration. One exception was the rotary speaker; while adequate for use in a busy mix, it simply lacked the animation and warmth of the real thing. However, I found that by adding a little extra processing, it wasn't hard to make things sound significantly better. I put together a 1-source patch with compression, a tube amp emulator, rotating speaker, and reverb together to get a screaming "Hammond-in-Heat" preset, which was far more satisfying than the original.

Pitch Shifters

This was one family of algorithms that didn't seem to be on a par with the others. I'm aware that designing a pitch shifter that works well is not easy, even with all the technology available today. Like most multi-effects units with this capability, the DP/4 suffers from audible side effects when used for shifting pitches over fairly wide intervals.

The DP/4 provides four different pitch shifting algorithms, with each optimized for certain applications. One is designed for detuning effects and pitch correction, as its can only be tuned up and down a semitone from the input signal. Two other algorithms provide two notes that can be transposed over an octave up and down (the version that uses two units sounds much better than the 1-U selection). Finally, there's a combination stereo pitch shifter/delay, which seems to be best used for creating off-the-wall sound effects.

While I wasn't terribly enthusiastic about the pitch shifters onboard, the side effects are pretty much the same on anything short of an Eventide H3000. I don't want to imply that they're unusable, as lots of people seem to be happy using worse-sounding shifters than on the DP/4. Personally, I rarely use them for anything more than detuning by a few cents sharp or flat for fattening up textures, and the DP/4 sounded wonderful for this purpose.

Amplifier/Speaker Emulations

Can an unassuming box filled with digital chips actually do justice to a screaming Marshall or Boogie? When you start talking about that possibility to the average brain-damaged guitarist, you'll generally get reactions ranging between disbelief and revulsion. Well, I had three guitar molesters try out this much-hyped capability of the DP/4, and all ended up giving it passing-to-pretty-good grades. While all agreed that it was audibly different than the real thing, it was still good enough for recording and low-volume situations. All three were able to point out some of the limitations while wandering through the factory presets, which depended on each person's tastes. On the other hand, I got good results when playing my synths through the amp presets (although I usually had to tweak a few parameters to get the desired results).

The Van Der Pol Filter

In case you're unaware, the V.D.P. is an algorithm designed to enhance the high-frequency spectrum, similar to "enhancers" made by Orban (AKG), Aphex, and BBE. These devices can add a sheen to otherwise dull-sounding audio sources.

To my ears, the V.D.P. is fairly subtle. While it does add new spectra to the input, you'll find it necessary to experiment with the settings to avoid adding noise or odd side effects. While excessive use can sound unnatural, mixing in just a dash of V.D.P. can help make a plain sound stand out in a mix, or can almost make a nasty Mirage or ESQ-1 sound serviceable.

Compressors, Eq, Et Al

The compressors and other gain-control algorithms won high marks due to their smooth response (these things aren't easy to do digitally). Nice job, Ensoniq. The equalizer and filters are pretty good, with an ability to be swept over a multioctave range without zippering or noticeable audio artifacts — even with fairly frantic real-time modulation going on. This makes them much better for emulating analog-type filter technology (used in everything from the wahwah pedal to most synths and samplers). The wahwah and envelope follower emulations are fantastic, with no hiss, noisy pots, or batteries to worry about.

Two other things I should mention: Whenever a new preset or configuration is called up, all of the audio outputs are muted momentarily so that the processors can change what needs to be changed without glitching. This is true of virtually all multi-processors on the market, as well. Finally, each of the four units can be set to either switch over to dry signal, or to mute the out-

put whenever the effect is bypassed — yet another nice touch.

The MIDI Side Of Life

As you might expect, Ensoniq paid close attention to the MIDI capabilities of the DP/4. You can use up to six channels for controlling individual sections if you wish — that's one channel for each of the four units, another for controlling the configuration itself, and one dedicated to real-time control messages (although many users should be able to get plenty of mileage from one or two channels).

For starters, each individual unit has its own MIDI parameters: enable/disable, channel number, enable/disable program changes, enable/disable program map, and what particular MIDI controller is used to bypass the effects from that unit. Having a separate program map for each unit makes it possible to have all four units respond differently, even if they're sharing a single MIDI channel — very smart design. Furthermore, the configuration portion of the DP/4 shares these features, allowing you to reconfigure the entire setup, or reroute all four units in various ways using a single MIDI message.

Another clever feature is that all four units can be set to respond to MIDI volume messages on independent channels, allowing you to perform automated mixes of MIDI gear that ignores volume messages, guitars, vocals, etc. — without the need for a separate MIDI mixer. Very nice — so far, so good.

However, I was less enthusiastic with the way the DP/4 is equipped for real-time parameter changes. Each unit only allows control of two-user parameters each (that's eight overall), regardless of the complexity of algorithm in use. As a fan of using MIDI to control my effects in real time, I often find it necessary to control a dozen (or more) parameters at a time! It's unfortunate that my $500 Alesis Quadraverb (see review in the Feb. '92 *Hacker*) lets you split its eight parameters anywhere among the effects being used; I just wish that the DP/4 was at least equal to the Quadraverb in this regard.

The DP/4 offers a wide range of choices for what might be used for making parameter changes, including MIDI note number, velocity, pitchbend, aftertouch, controllers #000 through #127, the footswitches, and the footpedal/CV input. This selection is limited by the fact that the user is limited to choosing 8 of the entire group; the same 8 controllers are used for all presets and configurations. I would have preferred an approach where a separate set of controllers could be used with each preset, which would have allowed a much greater amount of control over things. Oh, well, maybe in the next software release...

Caveats

Of course, I have a few gripes with the DP/4, most of which are trivial. First, I'm really disappointed by the two previously mentioned limitations pertaining to MIDI real-time controls; there are plenty of times where I could have done a lot more with the DP/4 if it weren't for these limitations.

Second, It would be helpful to many folks if Ensoniq offered (optional) balanced inputs and outputs for the DP/4. There are lots of people in the pro audio world who are using gear with balanced I/O's exclusively, and making this option available would simplify using the DP/4 in sound reinforcement and broadcast applications.

Finally, I'd love to see Ensoniq offer alternate algorithms for this machine. While the present algorithms are great for meat-and-potatoes music, how about software emulating a Moog filter/VCA/and envelope generators, all under MIDI control? Or maybe a set of state-variable filters, each having its own frequency, resonance, and mode parameters? Or simulated tube compressors for all those folks who can't cough up the $2,500 or so for a classic Pultec? After seeing what the folks at WAVeBOY managed to do for the EPS-16 Plus processor (reviewed in the April '92 *Hacker*), I can't begin to imagine what might be done with the DP/4's turbopowered DSPs.

Conclusion

What can I say about the DP/4 that doesn't repeat the rave responses from other reviewers? I'm sorry if you had hoped that I would trash the thing in print, but it's rare to encounter products as innovative, versatile, and worthwhile as the DP/4. I, for one, am impressed.

With its multiple audio inputs and outputs available to be used in almost any way you see fit, it's not very hard to imagine how many ways the average musician could make good use of its talents. If you've got a multitrack recorder and a small MIDI setup for songwriting and recording song demos, adding a DP/4 would make a big difference in making your home productions sound more professional. And if you're performing live, effects can be used on various mixer channels or sends, as required, without any repatching or knob tweaking to deal with. The ability to reconfigure units between sources is what makes the DP/4 so different from any other multi-effects processor on the market — for now. I predict that we'll be seeing a number of copycat products with similar features in the near future, and we'll see the DP/4 become to multi-effects units what the LinnDrum was to drum machines.

What makes the DP/4 even more remarkable is that it's Ensoniq's first stand-alone signal processor — and those responsible for its design and manufacture deserve to be congratulated for their efforts. I can honestly recommend this box to anyone in the market for a serious multi-effects processor. ■

Bio.: Charles R. Fischer works as a test technician for AKG Acoustics, Inc. He has written more than 70 articles on electronics and music technology for a variety of magazines, designs custom MIDI controllers, and has played keyboards and synthesizers professionally.

Using the EPSs & the ASR-10 With an External Sequencer

Reworking Old Sequences

Gary Dinsmore

When you start grouping multiple pieces of MIDI gear around your EPS the problems multiply. This article is a walk-through of one such problem that I worked through in my home studio.

My system now consists of the EPS, a Yamaha piano box, a Roland drum box, a Midiverb and a keyboard mixer on the audio end feeding my old stereo. On the MIDI end I have a 3x8 MIDI switcher feeding Cakewalk in my 386 IBM clone computer. The EPS has a Maartists 4x expander with SCSI port in it and that is attached to a Seagate ST296N with 80 meg. This, incidentally, is the same drive I have in my computer, and it only responds on port 3.

My current project is to take many of the sequences that I recorded in the EPS and transport them over to Cakewalk and tidy them up. I have worked out the steps for getting the sequence into Cakewalk and then moving it back to the EPS after I have worked it over. The reason I like this procedure is that I can remove most of the aftertouch and pedal data. This reduces the size of the song by a bunch. I also add patch data to control the Midiverb and Yamaha. I find editing with the full screen computer much easier and faster than the EPS. Finally you can't work directly on the controller data in the EPS.

Here is how I edit sequences now.

Step one is to load the sequence in the EPS and set it up to transmit the data to Cakewalk.

Load the song and the appropriate instruments so you can play the song back. Start the song playing, select each instrument in turn and turn the volume down with the data entry slider to figure out which tracks are active. If you can't hear which part disappears run the volume down on all of the instruments then bring one instrument at a time up.

Go to these instruments under EDIT INSTRUMENT mode and set the instruments to send keys to either "BOTH" or "MIDI" so Cakewalk will get some data to record. Continue through the windows until you can set the MIDI OUT CHANNEL. I simply set these to the instrument number. That is instrument 1 gets MIDI channel 1, instrument 2 gets MIDI channel 2 etc. Also go to the EDIT MIDI pages and set the EPS to transmit on the Instrument Channels.

Set up the EPS sequencer to take its timing from the external MIDI, and turn looping off.

Step two is to set up Cakewalk to receive the MIDI data.

Go to the "Settings" menu and set the clock to internal. Next under "MIDI In" set up to record the channels that represent the tracks the EPS will be playing on. For example, if the EPS has data recorded for instruments 1, 2 and 3 set Cakewalk to record channels 1, 2 and 3. Also turn off the "MIDI thru" feature. Next in the "Settings" menu select "Record filter" and mark the events you want recorded. You need at least "notes on" and "notes off." You can also record "after touch," "controller changes," "patch changes," "channel aftertouch" and "pitch wheel changes" if you desire. Next select the "Channel table." With this you map the instrument channel from the EPS to tracks in Cakewalk. I have used this to record a medley of songs in one Cakewalk worksheet. To do this I record each song on a group of tracks in Cakewalk like 1, 2 and 3 for the first song, 10, 11, 12 and 13 for the second song, 20, 21 and 22 for the third song etc. For our purposes here, however, just record onto tracks 1 through 8 or how ever many instruments are in your song. You must also activate the "Use Channel Table" in the upper left corner of the screen. If everything winds up on the active track this is the first thing to check. You may have set up the channel table but forgot to turn it on.

On my setup I have to set switches to tell the EPS to look at Cakewalk and for Cakewalk to look at the EPS for MIDI data. If you are hard wiring this, run a MIDI cable from the EPS MIDI OUT to the computer interface MIDI IN A. Run a second cable from the EPS MIDI IN to the computer interface MIDI OUT A.

At last you are ready to record. Rewind Cakewalk and Record. After a count in measure Cakewalk will start the song on the EPS. When the song ends punch out with the space bar and Cakewalk will ask if you want to keep the take. Answer yes and you should get numbers in the events column of Cakewalk.

Now you go ahead and edit to your heart's content. Play it back, shift instruments, change pitch and velocity as you see fit. When everything is perfect you are ready to send it back to the EPS.

Start by erasing the song and all sequences under COMMAND SEQ- SONG. Change to EDIT MIDI and change the

MIDI IN MODE to OMNI. Check and see that the sequencer is set for MIDI for the CLOCK SOURCE.

Now go to the tracks in Cakewalk and turn on only those tracks you want to record to the first instrument in the EPS. This could be a single track, several tracks or even all tracks.

Now back to the EPS and hit the REC button. Since the EPS is waiting for the external clock it will not start recording until you hit Play in Cakewalk. When the song ends in Cakewalk the EPS will also stop and ask you if you want to "KEEP TRACK?" Reply with "Yes" as usual.

Select some new tracks in Cakewalk and a new instrument in the EPS and repeat. Do this as many times as you have parts to record.

When you finish set the clock source back to INTERNAL and the MIDI IN MODE to "MULTI." Now you can play the edited song on the EPS without running the computer. If you now save the song and an instrument bank you can load the song and the needed voices directly.

Working between these two machines can be quite frustrating. Each is so powerful that it can take a lot of trial and error to get all of the switches and modes set properly. To make the task manageable you need a check list. Then, when you have everything checked off you are ready to fly. ▬

Bio: Gary Dinsmore has been an amateur musician all his life, at least all he can remember. Gary spends a lot of time working with computers, so programing the EPS is an easy extension of those skills. He has started doing a little freelance writing and published "The EPS Users Guide."

SQ-1/2 & KS-32: How Things Work

Part 1: Strings 'n' Things

Mark Clifton

This is the first part in a series of articles aimed at the intermediate SQ-1 programmer who is familiar with basic sound design techniques (a graduate, one might say, of the Clark Salisbury School of SQ), but may be unfamiliar with some of the lesser known tricks that can spice up sounds and make them more realistic. Each month I'll present a useful, real-world sound patch that uses special techniques (like realistic vibratos or wind instrument pitch blips) that can be applied to other sounds. And in true Cliftonian fashion, I'll attempt to explain exactly how those techniques do what they do. These articles will focus mainly on imitations of acoustic instruments. If you're more into esoteric synthesized textures, check out Jack Stephen Tolin's "Wave Mutilation 101" series, which contains some of the most demented methods of destroying waveforms ever to spring from the mind of a psych major.

For this month, we'll look at the patch "Low Strings." This is a patch that I created for Latter Sounds because I was in need of a full, rich-sounding low string (Double Bass and Cello) section.

The String Ensemble waveform is good raw material for most string sounds, but it has a major flaw in the lower range. The waveform is multisampled, that is it is made up of several different wavesamples mapped across the keyboard. This particular waveform appears to have been made up of three separate samples. The uppermost one sounds like a violin section. This sample is mapped to F#5 and all keys above it. The next sample adds what sounds like violas and maybe cellos and is matched very nicely to the wavesample above it so that there is very little change in timbre when you play between them. The sample extends from F5 downward to G3. On the rest of the keys below it is the double bass sample. And that's where the problem begins.

To start, solo the String Ensemble waveform by itself with no fancy modulation. Start playing a chromatic scale downward starting from C4. Sounds nice, huh? A very usable mid- and low-range string sound. That is, until you hit F#3 and wham!, the double bass sample happens. Just try playing a musical phrase between the two wavesamples and you'll soon find out that it's like impossible to create a smooth sound with that bass sample pounding on the low notes. Now don't get me wrong — both samples are good and usable. It's just that the difference in sound between them can be rather jarring. I knew that there was no way I could get a smooth low string with that kind of timbral gap in the middle.

What I needed was a way to remap the two wavesamples so that they overlapped, thus blending the sounds and allowing each section to play through its full natural range, which extends well past the ranges that the samples are mapped in. And although the SQ doesn't allow you to remap the samples within a waveform it does allow you to shift wavesamples into different note ranges.

When you tune a waveform on the SQ-1 (using Oscillator Tuning page), the samples it contains are shifted to a new note

SQ-1/2 & KS-32 Prog: Low Strings*

By: Mark Clifton

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	Expan	String	String
Wave	ViolaSect	StringEns	StringEns
Delay Time	000	000	000
Wave Direction	Forward	Forward	Forward
Start Index	00	12	12
MODSCR	Off	Veloc	Veloc
MODAMT	-	-09	-09
Restrk Decay	26	26	26

PITCH	1	2	3
Octave	-1	-2	+0
Semitone	+00	-04	+04
Fine	+00	+28	-24
ENV1	+00	-99	+99
LFO	+02	+02	+02
MODSCR	Off	Off	Off
MODAMT	-	-	-
KBD Ptch Track	On	On	On
Glide	Off	Off	Off
Glide Time	00	00	00

ENV1	1	2	3
Initial	-	00	00
Peak	-	00	00
Break	-	00	00
Sustain	-	99	99
Attack	-	00	00
Decay 1	-	99	99
Decay 2	-	99	99
Release	-	99	99
Vel-Level	-	00	00
Vel-Attack	-	00	00
Vel Curve	-	Linear	Linear
Mode	-	Normal	Normal
KBD Track	-	+00	+00

LFO	1	2	3
LFO Speed	38	36	37
Noise Rate	40	40	40
Level	24	24	24
Delay	59	59	59
MODSRC	Off	Off	Off
Wave	Triangle	Sine/Tri	Sine/Tri
Restart	On	On	On

FILTER	1	2	3
Filter 1	2Lo	2Lo	2Lo
Filter 2	2Lo	2Lo	2Lo
FC1 Cutoff	022	022	022
ENV 2	+70	+70	+70
FC1 KBD	-29	-29	-29
MODSCR	LFO	LFO	LFO
MODAMT	+11	+11	+11
FC2 Cutoff	036	039	036
ENV2	+46	+46	+46
FC2 KBD	+36	+36	+36
FC1MOD-FC2	On	On	On

ENV2	1	2	3
Initial	56	56	56
Peak	99	99	99
Break	86	86	86
Sustain	72	72	72
Attack	08	08	08
Decay 1	61	61	61
Decay 2	87	87	87
Release	77	77	77
Vel-Level	46	46	46
Vel-Attack	06	06	06
Vel Curve	Convex	Convex	Convex
Mode	Normal	Normal	Normal
KBD Track	+00	+00	+00

AMP	1	2	3
Initial	67	67	67
Peak	99	99	99
Break	92	92	92
Sustain	84	84	84
Attack	21	21	21
Decay 1	75	75	75
Decay 2	66	66	66
Release	30	30	30
Vel-Level	26	26	26
Vel-Attack	13	13	13
Vel Curve	Convex	Convex	Convex
Mode	Normal	Normal	Normal
KBD Track	+00	+00	+00

OUTPUT	1	2	3
VOL	70	74	70
Boost	On	On	On
MODSRC	LFO	Off	Off
MODAMT	+04	-	-
KBD Scale	+00	-99	+65
Key Range	-	A4#-C7	C2-D4#
Output Bus	FX1	FX1	FX1
Priority	Med	Med	Med
Pan	+00	+28	-28
Vel window	>000	>000	>000

HALL REVERB		
FX-1	45	(Note: Modwheel
FX-2	25	increases reverb.)
Decay Time	38	
Diffusion	54	
Detune Rate	36	
Detune Depth	14	
HF Damping	46	
HF Bandwidth	99	
LF Decay	+11	
MOD (Dest)	FX1-Mix	
BY (MODSRC)	Modwheel	
MODAMT	+99	

range to cause the change in pitch. In other words, if a waveform is tuned an octave higher than the original pitch, the key ranges of the wavesamples will shift downward so that they are mapped an octave lower. Instead of bending the pitch of the wavesamples, the SQ just moves them all to a different location. This is done to keep the sound consistent and prevent some of the weird sonic artifacts that can creep in when the pitch is bent too severely.

When a modulator, however, is applied to pitch (on the Pitch Mods page) it will bend the pitch without shifting the wavesamples. This is done by altering the sample rate of the wavesample so that you can bend the sound as high or low as you want without intruding into the key range of another sample.

Using these principles, I tuned the sounds so that they covered the key range that I wanted them to and then used an envelope to bend the pitch into tune. If you'll take a look at Oscillator two of "Low Strings*" you'll see how I tuned the lower double bass sample until it covered the range from C2 (the lowest note on the SQ-1 keyboard) to A#5. Since this put the sound massively out of tune, I used Envelope 1 with the Fine tuning parameter to bend the pitch until it was in tune. This took some tweaking to get it right, but not bad, considering. Then I scaled the sound (on the Keyboard Scale/Range page) so that it faded out in the upper register where some noisy artifacts start to appear as a result of the pitch bending.

The technique is basically the same for Oscillator three except that I used different tuning values in order to isolate the viola/cello sample. When both oscillators are played together you get seamlessly overlapping bass and cello sounds that play smoothly up the keyboard. Oscillator one was put in to cover up some of the sonic artifacts resulting from the bending of the pitch and also to add more fullness and consistency. This particular patch was created on an SQ-32 voice. The "Viola Sect" waveform is not available on the plain bread- and-butter SQ-1 but you can still get a nice realistic sound by replacing this waveform with the "String Ensemble" wave.

This technique can also be seen used in the patches "Tarkus" (TH #86) and "Sabre Saw" (#66) by Jim Grote and in "Sam's Piano" (#64) by Sam Mims. All three are VFX/SD-1 Hackerpatches but they transfer nicely into an SQ-1. Have fun shifting those wavesamples. But always remember this — if you have a dog, don't shift them too high. Trust me, I found out by accident how much good ol' Flem hates beat frequencies. ▬

Bio: Mark Clifton is a player and composer of Jazz, New Age, Orchestral and Rap (yes, Rap!) music and an aspiring Cyberpunk writer who also wouldn't mind going into sound design or film scoring. His favorite color is the infinite, star-speckled blackness of space.

Upgrading the ASR-10 Memory

Ensoniq Corporation

It seems as though there is some confusion as to what type of SIMM (Standard Inline Memory Module) should be used in the ASR-10 Advanced Sampling Recorder.

This should help: Located on the bottom of the ASR-10 is a small hinged door that is secured by one Phillips-head screw. Behind this door are four SIMM slots. When shipped, the ASR-10 will have two SIMMs located in the first two slots. These are 1-meg SIMMs, that when combined give the stock ASR-10 two megs of internal memory. The other two slots are for two more SIMMs.

Sounds simple enough, but here are some rules to follow when increasing the ASR-10 memory:

1. The ASR-10 will accept only 1-meg or 4-meg SIMMs.

2. Use only 8-bit SIMMs that run at 80 nanoseconds or faster. This type of SIMM is commonly used in Macintosh computers. *DO NOT* use the 9-bit, IBM-PC style SIMMs.

3. The ASR-10's four SIMM slots work in pairs of two; slots 1 + 2 (the slots filled with 1-meg SIMMs in a stock ASR-10) and 3 + 4. Each *pair* of SIMM slots *must* have the same size SIMM. If you install a 4-meg SIMM in slot 3, then you must install a 4-meg SIMM in slot 4. (Note: when installing SIMMs, it is suggested that the larger capacity SIMMs be placed in slots 1 and 2 and that any smaller capacity SIMMs be placed in slots 3 and 4.)

4. If any SIMMs are installed in slots 3 and 4, the jumper located on the circuit board just above slot 1 must be moved from the pins labled STANDARD to the pins labled EXP (expanded).

That's it. Remember, 8-bits, 80 nanoseconds, keep them in pairs, and move the jumper if you're using slots 3 and 4.

SIMMs can be purchased at most computer stores. The prices will vary, so it pays to shop around. ▬

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An SQ-R Primer For ESQ-1/SQ-80 Owners

Part II of III — Smart Transmit

Brian Rost

This series of articles is aimed at getting ESQ-1 and SQ-80 owners up to speed on integrating an SQ-R module into their setup. It is broken into three parts. In Part I, we looked at fundamental differences between the ESQ-1 and SQ-R architectures. Here, we will examine how to use the SQ-R Smart Transmit feature to add powerful controller capabilities to the ESQ-1 in live performance. And, in the final part, we will explore using the SQ-R in a multi-track sequencing environment and wrap it up with a discussion on using the SQ-80 disk drive to store SQ-R patch and preset data.

The Smart Transmit feature of the SQ-R is an idea that I'm surprised no one else has thought of before. There's a large gap between what controller features are found in your average MIDI keyboard and what is really needed to control a complex MIDI setup in real time. Using Smart Transmit, your ESQ-1 can take on many of the more powerful controller features that were added to the VFX family. The heart of using Smart Transmit is learning how to harness the presets. As mentioned earlier, you are always in one of the presets of the SQ-R. The idea is to use a preset as sort of a "mega-patch." Selecting a preset with a single patch change command actually triggers a complex series of events.

To make use of the Smart Transmit feature, place the SQ-R into either POLY or OMNI mode. Enter the System menu and scroll to the page where the base channel and MIDI mode parameters are shown. In OMNI mode, the base channel is somewhat irrelevant, but in POLY mode, this is the channel that we must set the ESQ-1 to transmit on. For this example, let's use channel 1. While we're still in the System menu, scroll over a few more pages and set both Prog Change and Preset Prog to ON. If Prog Change is OFF, the setting of Preset Prog is ignored, so make sure both are ON. Now any program change messages sent down the base channel to the SQ-R will select presets, rather than sounds. Before we leave the System menu, scroll to the pages for the Edit Key Range and Retransmit parameters and set them both ON.

OK, now we're ready to set up a preset. For this first example we'll assume we want to do something simple, a split program with the ESQ-1 playing the VELBAS patch on the bottom two octaves of the keyboard and the SQ-R playing the Grand Act piano patch on the upper three octaves.

Hit the Select Preset button and then use the Track buttons to select one of the eight tracks (the selected track's number will flash on and off). Let's put the bass on track 1, so select track 1 and then hit the Edit Track button. Using Bank Select, go to the PARAM bank, and find the page that shows Key Range. We could use the YES and NO buttons to select the key range values, but since we enabled editing the keyrange back in the System menu, all we need do to set the values is play a key on the ESQ-1 keyboard. Play B3 to set it as the high value of the key range.

Scroll to the next page and we see the current internal sound program that is assigned to the track. We're not using an internal sound for bass, so skip over this page and go set the MIDI channel on the next page. We can pick whatever channel we wish here, as long as it is not the base channel. For this example, let's make it channel 2. Two pages later we see a parameter for MIDI Program, enter the patch number for VELBAS here. Be careful! These numbers range from 0 to 127, so pick a number one less than the number that the ESQ-1 uses for the patch. The next page has the Status parameter, set it to MIDI. Then we come to the page for Pressure. For an ESQ-1, we can skip this because the ESQ-1 doesn't send pressure, but SQ-80 owners may want to set this to CHANNEL, for reasons we'll see later. On the next page set Sustain Pedal to OFF, skip over the Transpose parameter on the next page and we're done with the PARAM bank.

Use the Bank Select buttons to get to the mix bank. Here we set the output volume for the track over a range of 00 to 99. The PAN parameter on the next page is only of interest for internal sounds, so skip it, similarly the Output, Timbre and Release pages.

Now use the Track buttons to go to track 2 (notice we're still in the Edit Track mode), jump back to the PARAM bank and start setting up for our piano patch. Set up Key Range to start at C3, pick the sound as ROM 00, set Status to LOCAL, Pressure to CHANNEL (if you have an SQ-80) and Sustain Pedal to ON. The other parameters we don't care about for internal sounds.

Jump up to the MIX bank and set the volume, set Pan to SOUND (so that the panning programmed into the patch is used) and Output to SOUND (so that the effect program of the patch is used). The Timbre and Release parameters may be set here if you want to make quick tweaks to the patch, for now leave them at 0.

Now select the other six tracks and turn them all OFF by pressing both Track buttons at once while the track is selected. Each press toggles the ON/OFF state. Finally, name and save the preset as preset 00.

Now go back to the ESQ-1 and set the CHAN parameter on

the MIDI page to 01. Go select a new sequence and go to the MIX/MIDI pages. We needn't select VELBAS as the sound or even set the track volume, just set the track status to MIDI and the channel to 2. Deselect all the tracks in the sequence, then jump back to the INTERNAL Page and select the first patch. We can see the display of the SQ-R flicker as the preset is selected. Now we're ready to play.

We should find that not only do we have our split set up as we wanted, but that only the Grand Act piano responds to the sustain pedal. This is because we turned off the pedal response in the track for VELBAS, remember? If one patch sounds too loud, just pop back into the MIX menu on the SQ-R and tweak the volume to suit.

So much for a simple example, how about something more complex? OK, let's say we want to do some layers. We want to layer VELBAS with the SQ-R patch Clav. We would also like to layer Grand Act with some strings, but only in the first octave, since strings in the top two octaves sound pretty thin.

Starting from the preset we just created, let's tackle the bass layer first. Go back into the Edit Track menu and select track 1 again. Go to the PARAM bank and set the Status parameter from MIDI to BOTH. Now scroll back to the page that shows the internal sound and select ROM patch 24, Clav. That's our sole change in this menu. Go up to the MIX menu and set Pan to SOUND and Output to SOUND, and we're done with the bass layer. What we've done is set up the preset to select the Clav Patch for the internal sound while still calling up VELBAS on the ESQ-1, from the same track.

For the strings, we must create a new track, so turn track 3 ON and go into the PARAM menu. Now set the key range to go from C3 to B4, which is the middle octave of the keyboard. Set the sound to be ROM sound 17, String Section. The remainder of the PARAM Bank should be set identically to what we set up for track 2. Now go to the MIX bank. Set it up like track 2 but set the Output Parameter to FX2. Jump into track 2 and also set the Output parameter to FX2. This is because both Grand Act and String Section use the Hall reverb effect while Clav Uses Chorus+ Reverb. This way, since track 1 has Output set to SOUND, Chorus+Reverb becomes the effect for the entire preset. By setting the other tracks to FX2, the piano and string sounds bypass the chorus but still get reverb.

Now, name and save this preset as preset 01. Jump back to the ESQ-1 and from the INTERNAL page, try switching between the first two patches. We find that the SQ-R will jump between presets 00 and 01, alternating between the layered and unlayered sounds. Using the same strategy, we can build up to eighty presets which can be called up in live performance, each one being a complex set of splits and layers.

In our examples, we only scraped the surface. Our splits didn't overlap, but it's easy enough to set up splits that do when setting the key range. It's also possible to do transpositions of tracks, over a range of eight octaves. Where the ESQ-1 allows only a single split point and a maximum of two sounds layered on either side of the split, the SQ-R has no such restrictions. Imagine we go back to our original split, but replace VELBAS with BO_STR. Going to the Transpose page of the parameter bank for track one, we could set the transpose interval to be +2 octaves, so that the strings appear pitched in the same octaves as the piano even though they are played on the bottom two octaves of the keyboard. Notice that by using the transpose feature, keyboard tracking does not become a problem, since when the SQ-R receives C2 it retransmits C4 to the ESQ-1.

For each preset stored in the SQ-R, an equivalent sequence template should be created in the ESQ-1. The ESQ-1 template really only defines the MIDI channel, since volume and program selection will be under control of the SQ-R presets (Status should be set to MIDI). If we stick to using the same MIDI channels for the ESQ-1 consistently, then one sequence template will be sufficient. All we need do after powering up the ESQ-1 is to select that sequence, then simply selecting a new preset on the SQ-R will set up both synths.

As a last point concerning Smart Transmit, let's look into the Pressure parameter when using an SQ-80 as a master keyboard. The SQ-80 sends two types of pressure, channel pressure (where a single pressure value is sent for the entire keyboard), and key pressure (where a pressure value is sent for each key currently being held). The ESQ-1 and SQ-80 respond to both types automatically, unlike the SQ-R which requires you to select either key or channel pressure on a track by track basis. If set to key pressure, an SQ-R track will actually ignore channel pressure messages, but if set to channel pressure the SQ-R will convert key pressure to channel pressure. Of course, if the track has pressure set to OFF, both types are ignored.

Now assume we have two tracks set up in a split on the SQ-R, with each half of the split using a sound that accepts pressure as a modulator. If we send channel pressure from the SQ-80, both sides of the split will see the same pressure messages, not such a good idea. If we set the SQ-80 to key pressure, each side sees its own pressure messages, but they are key pressure messages. By setting the Pressure parameter for each side of the split to either KEY or CHANNEL, we can control how the track will respond to the pressure messages. This can be extremely important if we have a track driving a third synth which responds to channel pressure only, for example. In general, if we want to use pressure on more than one track of a preset, set the SQ-80 to generate key pressure. Select between key or channel pressure for each track based on what makes sense. ■

Bio: Brian Rost spends his evenings either hunched over his SQ-80 or playing bass with the HUBCAPS, a Boston-based roots rock band. To unwind during the day he designs computers.

EPS/ASR-10 Grand Quartet

Alan MacIntosh

For: EPSs and the ASR-10.
Product: *Ensoniq EPS Sound Library* SL-4 Pianos (Vol. 1) and SL-5 Pianos (Vol. 2).
Price: $39.95 per volume, 5 disks each.
From: Ensoniq Corp., 155 Great Valley Parkway, Malvern, PA 19355, (215) 647-3930 or contact your local Ensoniq dealer.

Packaged in cellophane and cardboard rather than traditional tux and tails, four Ensoniq pianos take their bows on the grand concert stage. From the West, *Volume 1* debuts Steinway 2 with Bosendorf 2, and from the East, *Volume 2* presents Kawai 1 and Yamaha 1 grands. Large versions weigh in around 3000 blocks, small versions about 800.

Admittedly, this author remains underwhelmed by grandiose piano samples, and while this particular grand quartet warrants less than a standing ovation, it merits a careful audition.

As a group, all the pianos sound and play wonderfully on the EPS-16+, and tonally, they fall naturally into a pair of brighter and a pair of more subdued grands.

Steinway 2 and **Bosendorfer 2** contain a little more sparkle and grit than their Eastern cousins. Run your fingernail along a bass string of an acoustic piano and you'll get the idea. The round-wound surface of the string translates to a grainy sound texture, and the Stein and Bosen capture that quality.

Kawai 1 and **Yamaha 1** are the mellower fellows, softer in tone, smoother in texture, with thicker, rounder sound.

Aboard the EPS-16+ and ASR-10

At the local Ensoniq dealer where I went to hear the grands on something hipper that my classic EPS at home, the newest EPS offspring, the ASR (Advanced Sampling Recording) keyboard, had just arrived. So of course I couldn't resist serving my grand samples to the ASR, which happily gobbled them.

Both the EPS-16+ and the ASR contain FX sections as well as parameters that allow greater control over velocity sensitivity, and because of this, all the pianos stand up well under most playing styles. Ballad style on the Stein and Bosen will give you the biggest problem — the sound dies far quicker than your fingers leave the keys. Otherwise, the FX's compensate nicely for spastic loops and stingy sustains.

Aboard the classic EPS

But wait! We've been addressing the EPS-16+ elite and future ASR owners. What about us humble classic EPS owners? We're the ones who really have to face sonic reality, so let's take a sharper look at this sample set and play the grands on the classic EPS.

Steinway 2 is bright, a little thin, with a touch of ambience that distances the sound. The feel? Well, er,...just like the moldy upright that's been sitting in the church basement since '65.

But we can remedy most of that clunky personality with a quick fix: in the EDIT mode, turn on all layers on the PATCH= page, underline the INSTRUMENT NAME on the EDIT page, select WAVESAMPLE VOLUME on the AMP page, and moving the DATA ENTRY SLIDER, set the WAVESAMPLE VOLUME. Press LOAD, then 0 on the keypad, and you're done. This brings all wavesamples in the instrument to the same value and brings you fairly close to a consistent sound across the keyboard. The quick fix compensates for inconsistent use of volume BOOST among wavesamples in the original EPS-16+ programming, and you can quick fix the other pianos as well.

Bosendorfer 2 is a little darker and fuller than the Stein, very present. Quick fix it, and you'll be playing a piano with a rich bass section and clear, woody upper octaves. Loops in the Bosen, except for a couple of cockeyed bass samples, sound exceptionally smooth with a hint of natural chorusing. Of the two Western grands, Bosendorfer 2 offers a more mature sound and musical potential. As a set, the Western pianos lack the full tone and long, comfortable sustain we need to play musically.

Eastern Pianos are mellow, attractive, playable. You may want to quick fix them, you may want to lengthen the decay time on the amplitude envelopes, but the **Kawai 1** and **Yamaha 1** will draw music from your fingers. The Kawai chords ballads beautifully, and the Yamaha will cover Floyd Cramer and Jerry Lee Lewis licks with its brighter personality.

Programming

Programming on all four grands falls short of their clean, clear wavesamples. Piano samples challenge even the best programmers because each sample demands its own meticulously tweaked amplitude envelope, its own carefully

scaled tone envelope to mask nasal loops in order to sound full and feel natural. Tone needs to brighten and volume needs to strengthen seamlessly as your fingers search for nuance and power from low velocities to high. In this grand set, you won't find that kind of programming.

Ensoniq has a classic opportunity here to increase sales of both sample sets and samplers by providing the kind of in-depth programming we players need! Give us a grand piano, a single layer that responds musically, that sustains long, that plays consistently from note to note, octave to octave. And when you add the EPS-16+'s and the ASR's FX to that kind of programming, the result can't help but astonish.

Patches

And give us patches! Creative patches! Generally, the patches on these disks offer a bright version, a mellow version, and a honky-tonk detuned version that sounds like Eubie Blake playing stride at the bottom of an overly chlorinated swimming pool.

How about a patch that gives us the upper octave, or a 2-octave doubling? Or a patch with attack that slides from marshmallowy to hard-as-nails with increased velocity? How about a three-layer patch with sound that swims with a slow, gentle detuning, or a double-layer version that choruses by increasing SAMPLE START in the second layer?

Small Versions

A small version accompanies each grand, and they're all, umh,... small.

If It Were My Money

I'm writing a check right now for the *Eastern* set — **Kawai 1** and **Yamaha 1**. I can already hear the music in those pianos, and I'm ready to let them inspire some new songs.

As for the *Western* set — **Steinway 2** and **Bosendorfer 2** — I think I'll wait. I lean away from pianos in my own writing, but if I were a grand piano hound, I'd buy the *Western* set just to strengthen my piano library and widen my palate of piano flavors. If it's your money, buy them with eyes and ears wide open, and put on your editing hat.

As for me, I'm loading in **Kawai 1** as we speak. The possibilities are, well... grand. ▬

Bio: Alan MacIntosh composes and produces music, designs sound, and studies the Japanese language in the high desert of Las Vegas, Nevada.

The Vanilla VFX — Not Dead Yet!

125 BPM Delay-Flange

Dara Jones

I must admit that my first encounter with the VFX was clouded with suspicion. Someone offered to trade with me for my Jupiter 6. Now the J6 is a great synth, but this offer seemed a bit too good to be true. Sure enough, my research revealed that not only had the VFX been known to have had problems, but there wasn't even an upgrade path for it. My friend assured me that his had been fixed and and I even went so far as to go hear it, but my suspicions remained with me... at least for a while. But I just couldn't get over the professional quality of the FX. Really breath-taking compared to the synth I had at the time. So, several months later, I became the proud owner of a great-sounding dinosaur and booted my other synth out the door.

In celebration of the upcoming holiday season I'm offering you hacks a flange-delay-reverb FX that can be best used in multi-mode. FX 1 is calibrated to a tempo of 125 beats per minute and FX 2 makes for a nice generic reverb. There's a lot of factory guitar/clavs that sound good through FX 1. I chose Popboard from the internals and ran ROM's Guit-Echo through FX2 and used it for a mid-range bass sound. With a little syncopation, it ALMOST sounds like the real thing.

Page 1: Del + Flange + Rev3 Decay-Time=72
Reverb Mix – FX 1=28 FX 2=49

A large hall type decay time was used on the reverb. I wanted the delay/flange to be real up front so I used just enough reverb on FX 1 to sweeten, but not send away. I used a little more for FX 2, but still not enough to overpower.

Page 2: Flanger Rate=38 Min=052 Max=083
Feedback= +13

A relatively slow flanger rate was used so that the guitar sweeps back and forth slowly as the music moves on and gives the guitar a little extra interest. A fairly conservative feedback # as well as min-max ratio was used because this

FX is meant to enhance, not take over.

Page 3: Delay Time=246 Regen= +07 Mix=41
Reverb HF-Cut= off

The delay time is calculated to complement the ROM Guit-Echo patch which is basically set to 240 ms. I used 246 ms for just a slight detuning of the tempo which is right around 125 bpm. The regeneration time of +07 gives only one repeat — any more repeats than that would've probably made mud. A mix of 41 was used so that the first strike of the note is slightly louder than its repeat.

So, have fun with this and write with your suggestions for future articles, because the VFX may be old, but he's not dead yet! ▬

Bio.: Dara works as a horticulturalist by day but by night she programs sounds and is a connoisseur of fine old analogs. She plans to do film editing in the next year or so.

Latter Sound's Volume 1 for SQ-80s

Michael Mooney

For: SQ-80.
Product: *Volume 1, The Collection* — 40 Sounds, 3 demos and documentation.
Price: $19.
From Latter Sound Productions, 1341 Westheaven Ct., Tallahassee, FL 32310. Phone: (904) 575-5561.

As a matter of practicality, there's not much support for the SQ-80 these days. After all, it has been discontinued for a few years now and even during its relatively short production run was kind of the Ross Perot of the D50/M1 race.

So as an avid SQ-80 enthusiast, when Latter Sound announced the release of a new volume of sounds for the SQ-80, I was more than a little interested. The SQ-80 *Volume 1 Collection* consists of 40 sounds along with handy performance notes that detail modulator programming and three very nicely done demo sequences.

Many of the sounds are quite good as demoed by the sequences, but I must confess that I was a bit disappointed to discover that less than half the 40 sounds utilize the SQ-80 exclusive waveforms. A fact made more ironic since the best sounds of this collection are definitely the ones that do make use of the SQ-80 specific waveforms. These include:

JOURNEY — a breathy digital electric piano with modulated panning,
METVOC — an ambient synth gong,
KYSLAP — a fairly accurate emulative electric bass,
BRSSECT — a terrific punchy brass section,
ISLAND — an interesting mallet and plink hybrid that uses a pseudo-slapback delay, and
CV WAH — a keyboard/guitar that uses the CV pedal to imitate, you guessed it, a wah pedal

AIR CAL is a chiffy, D50-ish synth that also uses the CV pedal but this time to add a more percussive attack. But my personal favorite has to be SUBSPC, an airy chime synth with a long sustain that allows you to play chords while bending single notes via Poly-key pressure. The technique takes some practice to master but it's worth it.

Most of the other sounds are ESQ-types that, while not bad, are not exactly groundbreaking. Exceptions to this are FLIGHT, an evolving resonant synth with stereo imaging from modulated panning, and two organs, ORGVOC and BRIORG. ORGVOC uses a bell-like vocal attack transient spliced to an organ wave to create a unique combination that I'm surprised to say I haven't heard before. And BRIORG is more of a traditional church-type organ but with the mod wheel providing brightening to suit the user's taste. But, curiously, neither organ features a pseudo-Leslie effect via aftertouch. Another minor gripe is that HORN and HORN2 sound virtually identical except for a slightly longer release on the latter.

So, overall, what we have here is a bit of a mixed bag. The question is, of course, "Is it worth the bucks?" I'd have to say yes. The SQ-80 sounds are strong and the others could be useful to some, especially if you don't already own a large library of ESQ sounds. But I do hope that with the release of SQ-80, Volume 2, that Latter Sound chooses to focus more on the SQ-80 exclusive waveforms. It can make the difference between a good collection and an outstanding one. ▬

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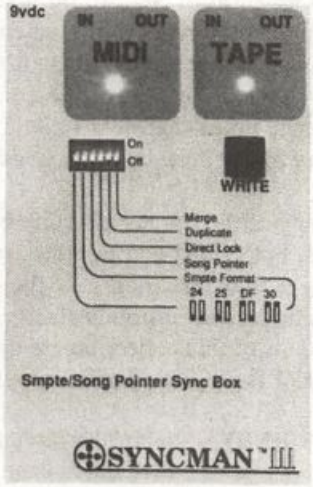

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Listening In On Customer Service

Anthony Ferrara and Dennie Edwards
Ensoniq Customer Service

Hello, and greetings from Malvern! Some of you may be familiar with our names from reviews and articles that we each have written for the *Hacker*. Well, coincidently, we have both been hired by Ensoniq and we are now working as product specialists in the Customer Service department. Consequently, Dennie and I will be collaborating on a monthly column of "Most-Asked User's Questions and Requests," based on our perspectives as product specialists.

Prior to working at Ensoniq, Dennie was assistant manager and keyboard tech for an Ensoniq distributor. He has an in-depth knowledge of the Ensoniq product line and how it interacts with other products and technologies. I come to Ensoniq from the academic side of music, where I was teaching on the college level, while playing and recording in the Philadelphia area.

Here are some of the queries we've been hearing lately, with mine first, followed by Dennie's DP/4 comments:

1. I'm getting a low-battery signal on my keyboard. What should I do?

The signal for a low battery can indicate a number of things, including simply needing a replacement battery in an older model. The lithium battery in the ESQ-1, for instance, will probably need changing. In the newer models, however, a low-battery message appearing on your screen will likely be a symptom of other conditions requiring service. These might include scrambled data requiring re-initialization or some type of hardware problem on the main board. As always, the Customer Service department can provide you with the name and number of an authorized service center in your area.

2. Most of the calls that come in to Ensoniq regarding the DP/4 are about the internal routing of the signal. The DP/4 is unlike any other processor on the market today.

The signal routing of the DP/4 goes like this:

» from the input jacks to the front panel for attenuation
» to the main processor board for A/D conversion
» to the appropriate 24-bit ESP (Ensoniq Signal Processor) chip
» then to the D/A conversion
» up to the front panel for attenuation
» then to the output jacks

A common question concerning the DP/4 is, "The output volume jumps when I bypass one or more units. How do I avoid this boost in output?"

The solution will depend on the configuration of the unit. The best way is to change the way the unit bypasses the processor. For this example, we will have the DP/4 in a one-source configuration. In this situation, we can use all four processors at once, in parallel. We'll use four effects — chorus, reverb, delay, and pitch — loaded into units, A, B, C, and D respectively. If we bypass any one of the four units, we will then experience this output boost.

What is happening when we bypass the unit is that the mix goes totally dry. The DP/4 has a parameter to change this. The Edit/Config parameter (Number 7) provides a way to change the effect of the bypass. Instead of changing the mix to dry and increasing the output, set the bypass button to kill, essentially setting the output mix volume of the unit to 0. One of the many way cool features in the DP/4. This feature will kill all volume from the output of the unit. If you have any unit with a series routing to another, there will be no input to the second unit.

So, think about what your configuration is like, your routing, your mixing, and the order of your effects, and go ahead and experiment. Remember, all of the factory presets can be called up by re-initializing the unit and you can store all of your custom programs through SYSEX. Have fun and just remember — if it sounds good, process it with a DP/4 and make it sound better! ▬

BACK ISSUES

Back issues are $2.00 each. (Overseas: $3 each.) Issues 1–30, 35–38, and 67–72 are no longer available. Subscriptions will be extended an equal number of issues for any issues ordered that are not available at the time we receive your order. **ESQ-1** coverage started with Issue Number 13. **SQ-80** coverage started with Number 29, (although most ESQ-1 coverage also applies to the SQ-80). **EPS** coverage got going with Number 35 (and also applies to the **ASR-10**). **VFX** coverage (which also applies to the **SDs**) got started in Number 48. The **SQs** got going in Number 63. (SQ articles also apply to the **KS-32**.) **DP/4** coverage started in #88 (much of which also applies to the **ASR-10**). 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.

Classifieds

EQUIPMENT

EPS 2X Expander $70. Yamaha SPX-90 FX processor $450. ART SGE Super-Effector $400. All in VGC w/manuals. (716) 828-1309.

EPS-16+ rackmount. New, not used. Nine months warranty left. Must sell, make offer. Jones, Barnett Drive, Tazewell VA 24651. Phone: (703) 988-7442.

EPS-16+, expanded memory, SCSI, FB-1 flashbank, loads o' sounds: $1500. Tascam Model 32 2-track, R-R tapedeck: $250. (2) 4-ch dbx noise reduction units: $200 ea. Yamaha SPX-90 programmable effects: $125. (503) 245-3752.

EPS with 2x expander, 50 sound disks, and all manuals, excellent condition: $1000. Jeff, (314) 537-1260.

VFX-sd Multi-timbral keyboard synth with built-in 24-track sequencer and disk drive. Home use only. Original box, all manuals, disks, etc. $1000. (201) 933-9636. Leave message. New Jersey, Giant's Stadium area.

Ensoniq SQ-80 complete with manual and cover,. 8 sound disks and 2 cartridges. Over 2000 sounds. Was only used in studio. $765. Phone: (215) 489-7646.

Special Expander Offer - Free Sounds - Best Prices. EPS-16+ 1-Meg Flashbank and 10 Free Disks only $250. Expanders for EPS, VFX-sd, SD-1. RAM memory for Akai, Casio, Roland, Peavey, and Yamaha. Wildwood Sounds, 4726 Pebble Creek Terr., Pensacola, FL 32526. Call Tony after 6 pm. (904) 944-6012.

SAMPLES

BIG MIRAGE SAMPLE BLOWOUT! The famous **MINOTAUR** 8-disk set of Medieval and Renaissance instruments is available for only $80.00! Lutes, viols, harps, bells, krumhorns, much more! Get 'em while they last! Minotaur Studios, 52 State St., Canton, NY 13617.

New 16-bit samples from Tom Shear! Now available: Minimoog Collection - 3 disks, 27 sounds, all with patch selects. Oberheim Collection - 3 disks, 26 sounds. Each 3-disk set only $15. Professional quality at PD prices. Write for sound list (include SASE): Tom Shear, 255 Small Rd., Syracuse, NY 13210.

Trade sounds by mail. I have over 1.6 million blocks (800 MB) library. Great PD and homemade! Craig Duncan, PO Box 83164, Los Angeles, CA 90083. Phone: 310-645-4181.

Looking to trade EPS or EPS-16+ samples. – I have over 100 megabytes of quality sounds and am looking for people to trade samples. All kinds of sounds welcome. Call Jay Armstrong at 203-349-9658 or write to: Jay Armstrong, 125 Creamery Rd., Durham, CT 06422. No copyrighted sounds.

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EPS Samples: Disks of Bolivian and Indian instruments, invented instruments, prosaic sounds, and the Recycle Orchestra. 9 Disks, 77 sounds, 308 patch selects: only $36. Bill Sethares, 622 N. Henry St., Madison, WI 53703. You haven't heard these before!

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PATCHES/SOUNDS

Wanted: VFX/SD-1 and SQ-80 sounds for trade. Also interested in sounds for Matrix 6, TX81Z, and Wavestation. (708) 427-1615.

I'm a new *Hacker* subscriber in desperate need of a good acoustic/grand piano patch for a VFX. I'm hoping someone has developed a patch that is better than the "Classic Piano" available with the VFX. If so, please call me at (302) 368-7324. Leave phone number, I'll call you back. Thanks.

VFX, VFXsd, SD-1 OWNERS. Volume 1: 62 PD sounds, 20 presets, $12.50 disks. Latter Sound Productions, 1341 Westheaven Ct., Tallahassee, FL 32310-8629. Phone: (904) 575-5561.

60 VFX-sd patches created by Jim Grote. Wide variety of sounds with complete documentation. Call for free Information Packet, or send $30 for VFX-sd disk to: Jim Grote, 3721 Frances Ave., Cincinnati, OH 45211. Phone: (513) 661-8885.

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NEW SQ-80 SOUNDS from the *Hacker's* Sam Mims! Soundset 4 takes full advantage of the SQ-80's unique waveforms, and brings "hidden waveforms" to the SQ-80 for the first time. Also available for the ESQ and SQ-80 are Soundsets 1, 2, and 3. Forty patches per set, each with 22-page booklet of programming notes and performance tips, for $17.95. Send SASE for free literature. Syntaur Productions, 2315 Mid Lane #44, Houston, TX 77027, or call (713) 965-9041.

USER GROUPS

30-Year-Old EPS-16+ owner would like to meet other '16+ owners in the New York area. Call Abraham, (718) 956-3597.

SOFTWARE

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Photocopies of out-of-print past issues of the *Hacker* can be obtained by calling Jack Loesch, 201- 264-3512 after 6 pm EST.

Folks in the New York City area can get copies of unavailable back issues of the *Hacker* - call Jordan Scott, 212-995-0989.

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Sonic Derivations — SDs and VFXs

The Pipe Organ

Jim Grote

I'd like to introduce my new series, *"Sonic Derivations."* Here I will pick various patches that I've created for the VFX/SD series, and go step-by-step through the methods I use to program them. This usually includes some history and technical information about the original sound being synthesized. Generally, I like to write about a sound that uses some of my unique Grote-like programming methods. These articles assume that you know the basics of creating patches on the SD series. And, frankly, even if you don't want to read this, you can always just enter the patch and get to try out a new sound for your SD.

When I first bought my VFX-sd, one thing that really impressed me was how many oscillators it could use for each patch; up to *six*. This feature still blows away most other synths. This programming strength inspired me to reach for one of my dreams — simulating a perfect pipe organ. Layering lots of waves is the ideal way to do this, as a pipe organ is comprised of hundreds of oscillators (i.e., each pipe) added together to get their huge sound.

People have been trying to electronically simulate the pipe organ for years, the most notable attempt being the Hammond organ series. The theory behind these organs was to emulate the additive synthesis nature of pipe organs (that is, create complex waveforms by adding together simpler waveforms such as the sine wave). In principle, the pipe organ is an additive synthesizer. Richer sounds are created by pulling out more stops, which adds more octaves/harmonics to the sound. Electronic organs use such devices as spinning tone wheels to created near perfect sine waves which are then added together with stops or sliders to create a fuller sound.

The end result is actually quite far from a real pipe organ. This is because each "oscillator" on a pipe organ creates a sound much more complex than a sine wave. The Hammond ends up having a different sound. Nevertheless, with this new sound, they have created their own legacy and aren't even considered to be imitating pipe organs anymore.

The basic way pipe organs generate their sound is by forcing air through a pipe when a key is depressed. This causes the pipe to resonate at a certain frequency. The pitch of the note generated is a function of the length and width of the pipe. Various timbres are created by using different pipes. Flutes pipes are metal pipes in which air is blown over a slot causing air in the pipe to vibrate. String pipes are similar but with a brighter sound. Brass pipes use a vibrating reed to create a bright horn timbre. Some of large bass pipes can be made of wood, giving a warmer sound.

With the pipe resonating around a certain frequency, "formants" are generated. A formant is a sound with a strong peak in its frequency spectrum giving it a vocal quality. The SD has such a wave, FORMANT-X. I use two FORMANT waves as the basis of my patch, CATHEDRAL, which I've included with this article. The frequency of the formant (the harmonic peak) can be adjusted by changing the transwave start point. By itself, the FORMANT wave doesn't immediately strike you as sounding like a pipe organ. Nevertheless, in the complete patch, the formants impart realism to the sound. Combined with the formants, I add the PIPEORGAN wave which adds a lot of upper harmonics. To enlarge and strengthen the sound, I add the FRENCHHORN waveform. This really mirrors the brass pipes.

Note that each wave is detuned a little bit simulating subtle imperfections in the pitch of the pipes. I pretty much leave the filters wide open so as to not mute the sound at all. When air is first blown into a pipe, the pitch wavers a bit before settling into tune. To recreate this, I use ENV1 on each wave to briefly modulate the pitch on the attack. Also, the larger the pipe, the longer it takes to reach its pitch so I apply some waveform delay to the lower oscillators, in particular the lower FORMANT and FRENCHHORN waves.

A sound isn't complete until it is placed somewhere, completing its identity. Pipe organs are often found in large cathedrals with highly reflective marble floors and walls. This creates enormous amounts of reverberation. Therefore, I send the patch through the CONCERT reverb algorithm, with a pretty long decay time. You can't play a pipe organ without mucho reverb.

I set up the patch select buttons to implement different pipe combinations. Like having multiple keyboards on a pipe organ, this allows you to switch between the full blast sound and more delicate subdued sounds. The right Patch Select gives a quiet flute sound, which is equivalent to having only one stop open. The left Patch Select gives a thin sound and both buttons selects a medium intensity sound. This one is useful if you need more polyphony without weakening the sound too much. Also, the timbre slider allows a continuous transition from full blast to subdued.

Well, I hope you like this sound. Last time, I gave you the chance to pretend you're Keith Emerson. Now I hope to give you the opportunity to pretend you're Bach for a day. Turn the volume way up and play, da dum dum, Bach's *"Toccata and Fugue in D Minor."* See you next time. ▬

Bio: Jim Grote offers a disk of 60 of his original VFX/SD sounds — see the classifieds. He's been programming and playing synthesizers for years. He is fascinated equally by both science and art: thinking and feeling, programming and unbridled jamming.

SD & VFX Prog: Cathedral

NOTES: (*0) selects subdued timbre.
(0*) selects single flute sound.
(**) selects thinner sound.
TIMBRE slider fades sound.

WAVES	1	2	3	4	5	6
Wave	Formant-X	Formant-X	Pipe-orgn	FrenchHrn	Ocarina	-
Wave Class	Transwave	Transwave	Waveform	BrassSnd	BreathSnd	-
Delay	20	21	0	5	0	-
Start	0	20	-	43	0	-
Modsrc	Keybd	Keybd	-	Off	0	-
Modamt	-71	-65	-	-	-	-

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

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

PITCH MODS	1	2	3	4	5	6
MODSRC	Timbre	Timbre	Timbre	Off	Timbre	-
MODAMT	-44	-11	-48	0	-14	-
Glide	None	None	None	None	None	-
ENV1	+3	+1	0	0	0	-
LFO1	+2	+1	-1	0	+1	-

FILTER 1	1	2	3	4	5	6
Mode	LP/3	LP/3	LP/3	LP/3	LP/3	-
Cutoff	127	127	127	127	127	-
KBD	0	0	0	0	0	-
MODSRC	Off	Timbre	Off	Timbre	Off	-
MODAMT	-	-44	-	-64	-	-
ENV2	0	0	0	0	-	-

FILTER 2	1	2	3	4	5	6
Mode	HP/1	HP/1	HP/1	HP/1	HP/1	-
Cutoff	32	33	0	33	0	-
KBD	+90	+90	+90	+90	0	-
MODSRC	Off	Off	Off	Off	Off	-
MODAMT	0	0	0	0	0	-
ENV2	0	0	0	0	0	-

OUTPUT	1	2	3	4	5	6
VOL	85	82	85	86	72	-
MODSRC	Timbre	Off	Timbre	Off	Timbre	-
MODAMT	-95	0	-92	0	-6	-
KBD Scale	0	-34	0	-22	0	-
LO/HI Key	-	A0-C8	-	A0-C8	-	-
Dest Bus	FX1	FX1	FX1	FX1	FX2	-
Pan	35	50	56	44	63	-
MODSRC	Off	Off	Off	Off	Off	-
MODAMT	0	0	0	0	0	-
Pre-Gain	Off	On	Off	Off	Off	-
Voice Prior	Med	Med	Med	Med	Med	-
Vel Thresh	0	0	0	0	0	-

LFO	1	2	3	4	5	6
Rate	22	13	21	20	21	-
MODSRC	Off	Off	Off	Off	Off	-
MODAMT	-	-	-	-	-	-
Level	26	20	24	20	20	-
MODSRC	Off	Off	Off	Off	Off	-
Delay	0	0	0	0	0	-
Waveshape	Sine	Sine	Sine	Sine	Sine	-
Restart	Off	Off	Off	Off	Off	-
Noise SRC RT	0	0	0	0	0	-

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

ENV1	1	2	3	4	5	6
Initial	30	30	-	-	-	-
Peak	0	0	-	-	-	-
Break 1	0	0	-	-	-	-
Break 2	0	0	-	-	-	-
Sustain	0	0	-	-	-	-
Attack	12	12	-	-	-	-
Decay 1	0	0	-	-	-	-
Decay 2	0	0	-	-	-	-
Decay 3	0	0	-	-	-	-
Release	0	0	-	-	-	-
KBD Track	0	0	-	-	-	-
Vel Curve	Cnvx2	Cnvx2	-	-	-	-
Mode	Norm	Norm	-	-	-	-
Vel-Level	0	0	-	-	-	-
Vel-Attack	0	0	-	-	-	-

ENV2	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	-	-	-	-	-	-

ENV3	1	2	3	4	5	6
Initial	84	84	84	84	95	-
Peak	99	99	99	99	73	-
Break 1	95	95	95	95	74	-
Break 2	95	95	95	95	73	-
Sustain	95	95	95	95	73	-
Attack	1	1	1	1	44	-
Decay 1	9	9	9	9	0	-
Decay 2	13	13	13	13	0	-
Decay 3	9	9	9	9	0	-
Release	14	11	12	13	12	-
KBD Track	+10	+10	+10	+10	+10	-
Vel Curve	Cnvx1	Cnvx1	Cnvx1	Cnvx1	Cnvx1	-
Mode	Norm	Norm	Norm	Norm	Norm	-
Vel-Level	0	0	0	0	0	-
Vel-Attack	0	0	0	0	0	-

PGM CONTROL	
Pitch Table	Off
Bend Range	**
Delay	X1
Restrike	32
Glide Time	0

EFFECTS (2)	
Diffusion	58
Pre-Delay	43
Early-Refl Level	9
Time	30

EFFECTS (1)	
Effect	Concert Reverb
Decay Time	56
FX1	62
FX2	25

EFFECTS (3)	
FX2 Mode	Norm Stereo Send
LF Decay	5
Reverb HF Damp	30

PERFORMANCE	
Timbre	0
Release	0

Prog: Koke Bottles

By: Peter Eades, Browns Plains, Australia

Notes: One of my favorite sounds from the Genesis album, *We Can't Dance*, is the milk bottle sound from the intro to *"Dreaming While You Sleep."* Koke Bottles is my recreation of this sound — not quite mallets, not quite island perc. The strike gets harder as velocity increases and the sound gets brighter as the wheel increases.

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	TunedPerc	Perc	TunedPerc
Wave	Marimba	WoodenHt	Doorbell
Delay Time	23	0	15
Wave Direction	Forward	Forward	Forward
Start Index	39	0	58
MODSCR	Veloc	Off	Veloc
MODAMT	-26	0	63
Restrk Decay	0	0	0

PITCH	1	2	3
Octave	-1	+1	+1
Semitone	0	0	0
Fine	-3	-22	+4
ENV1	0	0	0
LFO	0	0	0
MODSCR	Off	Off	Off
MODAMT	0	0	0
KBD Ptch Track	On	Off	On
Glide	Off	Off	Off
Glide Time	0	0	0

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	-	-	-
Noise Rate	-	-	-
Level	-	-	-
Delay	-	-	-
MODSRC	-	-	-
Wave	-	-	-
Restart	-	-	-

FILTER	1	2	3
Filter 1	2LP	2LP	3LP
Filter 2	2LP	2HP	1HP
FC1 Cutoff	76	67	127
ENV 2	76	0	99
FC1 KBD	0	67	0
MODSCR	Keybd	Wheel	Wheel
MODAMT	0	12	30
FC2 Cutoff	127	0	0
ENV2	0	0	0
FC2 KBD	0	0	0
FC1MOD-FC2	On	On	On

ENV2	1	2	3
Initial	-	-	-
Peak	-	-	-
Break	-	-	-
Sustain	-	-	-
Attack	-	-	-
Decay 1	-	-	-
Decay 2	-	-	-
Release	-	-	-
Vel-Level	-	-	-
Vel-Attack	-	-	-
Vel Curve	-	-	-
Mode	-	-	-
KBD Track	-	-	-

AMP	1	2	3
Initial	99	99	99
Peak	71	99	0
Break	19	0	0
Sustain	2	0	0
Attack	36	0	31
Decay 1	36	47	46
Decay 2	27	0	73
Release	50	0	0
Vel-Level	66	46	0
Vel-Attack	0	0	0
Vel Curve	Quick	Linear	Quick
Mode	Finish	Normal	Finish
KBD Track	28	0	98

OUTPUT	1	2	3
VOL	88	65	90
Boost	On	On	Off
MODSRC	Off	Off	Wheel
MODAMT	0	0	29
KBD Scale	0	0	0
Key Range	C2 C7	C2 C7	C2 C7
Output Bus	FX1	FX2	FX1
Priority	Medium	Low	Medium
Pan	28	-14	28
Vel window	0	0	0

EFFECTS —

Any reverb effect — slightly drier on FX2.

The Hack: I'd like to thank Peter for this particular No-Deposit / No-Return sort of patch, *"Koke Bottles"* from Australia. A couple of suggestions: in the Output Section, lower Vol for Voice 1 to 65. This will give all three voices a more even balance. And, although Env 1 is set to default in this patch, some changes in the Pitch Envelope may create some interesting motion. (Even though it's not "authentic" to the patch.) Since Peter wants us to choose our own reverb, try Hall Reverb, where FX1 = 25, FX2 = 35, Decay Time = 43, Diffusion = 50, Detune Rate = 30, Detune Depth = 25, HF Damping = 25, HF Bandwidth = 85, LF Decay = +14, and Modulate FX2 Mix by Modpedal at +99.

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.

Pending Hacker-Requests: **VFX/SD-1** – A piano patch better than the standard "Classic Piano."
SQ-1 & 2/KS-32 – A "Harmon" muted trumpet sound, like "Miles Davis" sound.
ESQ/SQ-80 – Patch sheets for the Heaven patches that were released to public domain.

SQ-80 PROG: Parity — **BY: Charles R. Fischer**

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	00	00	Synth2	LFO1	+02	-	-
OSC 2	+0	00	03	Synth2	LFO2	-02	Env1	+03
OSC 3	+0	00	04	Pluck	LFO1	+02	Vel-X	+02

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	55	On	LFO2	+06	Kbd2	-07
DCA 2	56	On	LFO1	+04	Kbd2	-06
DCA 3	40	On	Vel	+42	Kbd2	+08

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	086	20	08	Off	00	Off	00

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	38	04	LFO3	+44

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	21	Off	On	Tri	00	00	21	Wheel
LFO 2	23	Off	On	Tri	00	00	63	Wheel
LFO 3	18	On	Off	Noi	00	01	20	Press

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-24	+00	+00	08L	00	04	08	63	20	18
ENV 2	+63	-63	+00	00L	00	48	56	63	20	09
ENV 3	+63	+00	+00	26L	00	00	18	00	20	00
ENV 4	+63	+63	+63	12L	00	00	32	32	42	00

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	Off	Off	Off	00	On	Off	Off	Off

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

The Hack:

Parity is a simple patch with a clear digital timbre. I came up with this sound to prove to someone that with the right programming and a little effects processing, the SQ-80 could sound *at least* as good as the Roland D-50 (hence the name). We both ended up preferring the SQ-80!

DCAs 1 & 2 create the bright, metallic sound with a bit of detuning; the modwheel adds vibrato, while pressure brings in a slight pan modulation. The filter has been set to bring out the upper harmonics with medium resonance and a high cutoff frequency. (Thanks to Sam Mims for providing the idea.)

I recommend playing this patch through a medium-long reverb and a fairly long delay with some regeneration. Pan the reverb and the delay's stereo outputs to different locations in the mix — and instant ambience!! Also, this patch sounds best in the top three octaves of the keyboard.

Bio: Charles R. Fischer works as a test technician for AKG Acoustics, Inc. He has written more than 70 articles on electronics and music technology for a variety of magazines, designs custom MIDI controllers, and has played keyboards and synthesizers professionally.

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The Interface

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

I have two questions concerning use of Flash memory on the **EPS-16+** rack.

1) Will the EPS-16+ boot itself from Flash? Is there any point in copying the OS into the flash in order to avoid having to boot from floppy? (I am assuming those lucky enough to have hard drives can boot from the hard disk?)

2) It is possible to obtain 2Mb flash memory chips for the EPS. Is the 16+ capable of addressing the full 16R RAM plus 2Mb of flash, or is there in fact no point in fitting more than 1Mb flash to the 16+?

Any clues on these points gratefully received.

And for a bonus point: Can anyone recommend a well-produced cimbalom sample for the EPS? I'd really rather not spend the time finding and recording a cimbalom myself!

Regards,
Andy Spiceley
20 Langborough Road, Wokingham
Berks, RG11 2BT, England
Phone: 0734 787171
Fax: 0344 487832
email: a.spiceley@poda.wins.icl.co.uk

[CS – 1) Yes, the EPS-16+ can boot from an OS copied to the Flashbank. This will allow you to boot the EPS-16+ with no disk in the floppy drive.

2) If I'm understanding your question correctly, the answer is yes – the EPS-16+ rack will address all internal memory, plus whatever memory you have installed in the Flashbank. So you definitely will get more mileage out of the FB-2 Flashbank, which provides 1 megabyte of programmable ROM in addition to whatever memory you have installed in the EPS-16+ (rack or keyboard).

As for the cimbalom, maybe one of our readers has a clue. Readers?]

[Ensoniq – As we see your question, you are asking if the size of Flash memory can be 2 Meg. The answer is no, the denser chips are not compatible with the board design. The fullest possible memory for your EPS-16 PLUS is 2 Meg RAM and 1 Meg Flash.]

Dear Hacker,

Three cheers for the basement.

I'm tired of musicians who whine and apologize because they, "*just* make MIDI music in their basements." It's as if hearing loss, a record deal, genital herpes, a drug problem and 1,000+ screaming fourteen-year-olds at a gig is the only worthy goal in life – the "I Didn't Become a Pop Superstar So Life Isn't Worth Living" syndrome. Yeah, it's great to have goals and to dream but just because your name isn't Michael Jackson doesn't mean it's time to sell your stuff and spend the rest of your life on the couch watching Peoples Court reruns. What is really important to you? Is it creativity, a good groove or is it shaking your skinny butt in public?

This may sound like I remember when movies were a nickel, but it wasn't that long ago that people were using patch cords and having to write down many, many settings for one sound. The early Moogs were so big that you got exercise running a voltage control line from the keyboard to the first oscillator. Anyway, who wants to wait for a stoned drummer to show up three hours late whose grandma just died for the fourth time this month? In your basement you don't have to listen to a guitar player who thinks that on the seventh day God invented the Les Paul, a 3000-watt Marshall amplifier (cutoff at 4 kHz) and only knows three bar chords. There is life after *Stairway to Heaven*. I actually liked the tune the first 1,000,000 times I heard it. The hell with all of them – three cheers for the basement!

Okay, I will admit that another set of ears can help and yes, there can be a synergy created playing with other people but that is not the only way to make music and it certainly isn't the way things are heading. Let me load a violin sample from my SCSI drive into my ASR-10 and play a very sad tune for the poor musician who is surrounded by all of this great Ensoniq gear with thousands of CD quality sounds and the latest in computer editing. In order to do that, though, I've got to go down in the basement.

Jay Armstrong
Somewhere in the U.S.

[CS – If it's any consolation, you don't necessarily need to make it to the big time to have a hearing loss, genital herpes, and a drug problem, from what I understand. And if MY butt was skinny, well, I don't know, but I might shake it – just a little.]

Gentlemen:

We are a small comedy music, effects, and radio theater production house. The **'16+** has been a most welcome enhancement to our small studios. After some six months of working with the equipment, both of our operators feel that they are still quite novice and somewhat distant from realizing the creative potential of the machine. We know it will just take study and hands-on experimentation, but a few answers now will hopefully expedite our efforts.

Much of our work consists of adapting licensed sound effects. Could we have a step-by-step patch select assignment guide? Often we have tried to sample an effect but load the same sample into other registers for editing, so that we may have the original plus three edited versions to assign to patch selects. Is this not done by the copy instrument command or does that have the effect of restricting edit because they are copies? If so, must we sample the effect four separate times to have them all on board for editing?

Also, we noticed that the Bosendorfer piano (ED 005 and 006) has no patch select functions. Is that because it is an EPS compatible disk? In closing, we would like readers to know that we are always looking to purchase comedy samples/sounds, scripts, joke collections, parodies, etc.

Respectfully,
J D Ryan, Producer
The Brothers Ryan
P O Box 964
Ocean View, DE 19970
(302) 537-0775

[CS – Since making a copy of an instrument doesn't copy the actual wavedata, but rather

sets up a new set of "pointers" to that data, any edits you make to a copied instrument's wave data will affect the original as well. You don't need to re-sample the instrument, though. Just take your new instrument, save it to disk, and then load it from disk into any locations you want to edit independently from the original instrument. This has the added benefit of insuring that you've got a backup of the original instrument on disk, in case of any problems.

If all you want to do, however, is to create patch select variations, you're going about it the wrong way. Once you have a sound sampled into a new layer of a new instrument, you can simply copy that layer back into the same instrument. You can have up to 8 layers in an instrument, of course, any of which can be copies of your original layer. These layers can be assigned to play in any combination, under control of the patch selects. The basic steps for accomplishing this are:

1) Sample your effect into a new layer of a new instrument. This will default to Layer 1.

2) Select Layer 1 for editing – hit EDIT, and underline LYR=1.

3) Copy the PARAMS (not PARAMS +DATA) only of layer 1 back into the same Instrument – press COMMAND, then LAYER, then scroll to COPY LAYER. Hit ENTER and follow the prompts.

4) Assign the new layer to a patch select. – hit EDIT and double-click INST to move to the layer assign page.

5) As you hold one, the other, or both patch select buttons, you will see which layers are active in any given patch. Change these assignments by scrolling to the layer you want to turn on or off for the patch you're working with, and use the UP/DOWN buttons to turn the layer on or off.

6) Now when you want to edit the new layer to create a variation, be sure you have the correct layer selected for editing, and that the layer is active in the current patch.

And I'm sure Ensoniq will correct me if I'm mistaken, but I believe that the reason there were no patch select variations included with the Bosendorfer sound is that there simply wasn't enough room on the disks to include them. While copying layers to use for instrument variations takes up very little space, the Bosendorfer is a rather large sample, and I think the decision was made to place priority on the quality of the sound of the instrument, rather than trim the samples down to make room for patch select variations.]

[Ensoniq – Clark is right about the Bosendorfer piano. We prioritized maximum size over leaving memory free for Patch Selects. Remember, an in-box sound has to fit in an unexpanded EPS-16 PLUS (1 Meg RAM) so size vs. quality was an important issue.]

Dear TH and Ensoniq,

The new **KS-32** seems to be a nice piece of gear but I still hesitate to buy one. What about a "PLUS" version with a disk drive and sample-RAM? Or even better – a complete **EPS-16+** in the KS-32 box with those wonderful 76 keys. I can tell you I know a hell of a lot of keyboard players who would buy a sampling workstation with 76 wooden keys as a stand-alone unit on stage. And maybe some small built-in speakers for hotel rooms? An 88 key board would simply be too large for the car's backseat.

I swear you would blow out Korg's "ProX." Please keep that in mind when you design the successor for the EPS-16+ – you know, with some expanded RAM possibilities.

Keep up the good work.
Matthias Walh
Villmergen, Switzerland

[Ensoniq – Well, you're a little late to affect the successor to the EPS-16 PLUS, but we hope you'll be satisfied by the features of the ASR-10. We have had great reaction to the feel of the KS-32 so we will certainly keep your comments in mind. By the way, the keys on the KS-32 use a weighted, flying mechanism to achieve their true feel, but they are not wooden. Thanks for writing!]

Dear TH,

I currently own a **VFX-sd** which is full of great sounds. One use for my equipment is an Easter and Christmas church production (full scale with orchestra, choreography, 150 member cast – in short, the works!) It never fails – on each production I am asked to come up with various sound effects. The one effect called for every time is for wind. When I owned my ESQ1, I simply replied, "No problem," punched up one of several wind patches and instant breeze. Well, now that I own the VFXsd, try as I might, I have yet to see any wind come out of that board. I haven't seen any third party sounds with wind patches either. Maybe TH or anyone out there could help me out.

Thanks much
Jerry Iverson
Portland, OR

[CS – Hi Jerry! How's the wife and kids?

In looking through my database, I find no wind-type patches for the VFX or SD series. So tell ya what I'm gonna do. I'm gonna put together a wind sound for publication in next month's Hackerpatch. So watch these pages, and don't let your subscription lapse.

And give me a call – let me know how you're doing.]

TH,

I'm really upset. I found out today that Ensoniq is coming out with a new **EPS** with 32 note polyphony and 16 Meg of memory. Also they have stopped making the EPS-

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16+. I and thousands of other people have been let down because our '16+s will be obsolete. I have had mine only for nine months. Already they have discontinued it. Maybe they'll make some kind of upgrade for polyphony or memory but I heard from a reliable source that they can't.

It seems like I get stung on keyboards no matter how much I research them. I wonder if Ensoniq would like to buy my '16+ back. What a joke. Wait until all the hackers find out about this. I won't be the only one writing in.

Thanks for hearing my gripes,
Don Suite
Salt Lake City, UT

[TH – Hmmm, always stung, no matter what. Okay Don, you win. Next time you buy something we'll all promise to NEVER make anything better.]

[CS – I know it can be depressing when a newer, flashier version of a product that you already own comes out – it happens to us all. About six months ago I purchased a Macintosh IIci system. It was a bit of a tough decision, because I really wanted a portable machine as well, but I couldn't afford both a desktop and a notebook Mac.

Now Apple has just introduced the Macintosh Duo – a machine that functions both as a notebook and as a desktop computer, with power comparable to my IIci. And for not much more money than my IIci. So am I depressed? No. And here's my reasoning.

1) I love my IIci – it's a great machine. It's quick, versatile, and gets the job done – usually in a relatively elegant fashion. This fact has not changed because Apple has introduced a new machine.

2) If I had waited for the next generation of Macintosh before making my purchase, I would have spent the last six months banging my head against the performance ceiling of my old computer. Projects would have taken longer (making my daily work routine less productive and less lucrative), and my personal frustration factor (PFF) would have remained at inordinately high levels.

3) I think the new Mac Duo is a way cool concept. I'm looking forward to seeing where this technology heads, because sooner or later, I will want to upgrade from my present machine. I'll probably be working with my present system for a couple more years, anyway, but I'd like to think that personal computer technology will develop quickly enough so that when I'm ready, the upgrades available to me will include some astonishing technology.

So I guess it's really just the old "half-full/half-empty" syndrome – it all depends on how you look at it.]

[Ensoniq – Dear Mr. Suite,

Clark makes a great point, but we thought you'd appreciate hearing from us as well. Yes, we stopped making the EPS-16 PLUS and now make a newer design that incorporated many of the features that our users (and Hacker readers) have asked us to make. We have stated time and time again that we simply couldn't add these features to the existing products, but we heard the need for them and created the product. That is not a bad thing. And your EPS-16 PLUS continues to work and will still provide all the great features and sound that were the factors that prompted you to buy it for in the first place. It is not obsolete, *and you*

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can continue to make great music with it for a long time to come. Just because the Mini-Moog, Prophet 5, CS-80, DX-7 (and dare we say) Mirage are no longer being manufactured does that make them obsolete, useless, and a joke?]

Dear TH & readers,

I've been real busy in the studio (Studio B) lately, but I couldn't resist offering you a short review of the first encounter with the **ASR-10**. My predictions weren't too far off!!

Taking the time to sit down and try out the brand new ASR-10 is a tough job, but I volunteered anyway. The opportunity came when Saturday our local music store was hosting a "Factory Rep. Show and Sale." I was all up for this special event because the rumor was one of the new ASR-10s would be on display. Needless to say after owning an EPS and watching the development of the 16+ I was looking forward to seeing if the ASR-10 would be the next quantum-leap in sampling. My predictions had been laid out for all to see in the *Hacker Interface* and I wanted to examine in person, what had been only hinted at on paper. You've probably read the facts about the new unit published in the October issue of the Hacker. Therefore I won't go over the same figures again except to point out a few highlights...

Cosmetically the ASR-10 is slightly larger (and heavier) than any of its sampler predecessors. This only becomes important if you use a hard case and hope to keep it when you upgrade. The color is more in keeping with the 16+, it's black. As a matter of fact even the buttons are black with very few breaks in the look except for the large logo on the right reminding you you've got the best of the best. Keep in mind the unit I had to check out may have been somewhat of a prototype so a few things might change. The LED read out is very similar to the other units but I suspect the information line may have been raised up a little to make reading easier at lower viewing angles. The keyboard is a little stiffer to the touch and has an excellent synth feel. Don't worry, this is no piano action or spongy "clicker" either. The new high-density drive works faster than the standard drive (estimated about 20% faster), but this may only be with Hi-Density disks. I have yet to determine that one. One other benefit of the HD Drive is that now a lot more information can fit on one disk. Some of those 2-disk pianos you already own can now be transferred to the new format on a single HD disk and cut down on disk swapping hassles. The access to the floppy drive is a bit more awkward as you tend to brush up against the control wheels while inserting or removing disks.

Concerning the sampling side of things, Stereo is the new feature here. Stereo in and out. The double LED lights that give a constant read out of input material (for sampling or effects processing) should make these jobs easier to do. Also making your sampling life easier is a small input volume control and mic/line switch. Both are located on the back side. It appears as though the "Bar graph" read out inside the view screen still goes blank when actual sampling happens. This unit had the 1.0 software and there was a glitch in the bar-graph LEDs which I suspect will be worked out with the next update. But what about the sound?? Well this new sampler uses the state of the art "1-bit" analog-to-digital conversion system. This is the same type as those used in the latest DAT recorders. This new conversion system combined with 16 bit technology and a 44.1k sample rate gives one of the cleanest, most natural sounding samples I've heard. The additional memory capability is expandable to 16 meg, all using relatively inexpensive, user installable Simms chips. With this much memory the capabilities of the ASR-10 start sounding more like a mini hard-disk recording system more than a sampler. The effects add additional spice to the sounds and with 50 algorithms (read types..reverb, delay, distortion, chorus, etc.) You can even plug another instrument into the audio inputs and process it through the onboard effects easily. With flexibility like this it'll be a while until you'll need to buy another effects box. All in all I was very impressed with this new unit. the only let down is that an onboard hard drive is not available as an option. Even with 20% faster load times those big pianos still take a while. Well do I think this new machine is worth the $2695 tag. Yup! At least my trusty EPS is soon to be replaced by the new ASR-10 in my studio.

If you own a 16+ and don't need the extra sample time, then the decision to move up is a bit tougher, but as for myself, I've already put my deposit down to order one. This is only a brief review, I expect we'll be seeing a lot more articles about this amazing new unit in future *Hackers*. I'd especially like to thank Ensoniq and their rep, Mike Lundin, as well as Guzzardo's Music and their rep, Mike McIntyre, for letting me have some hands on time with the new sampler before they were readily available. I guess some dreams do come true!

Thanks again...
Michael Castronovo
Rockford, IL

Current Ensoniq O.S. (Disk/EPROM)

EPS	2.49/2.40	SQ-R	1.02
EPS-M	2.49/2.41	SQ-R 32	2.03
EPS-16 PLUS	1.3/1.00F	SQ-R PLUS	1.15
MASOS	2.0	SQ-2	1.2
MIRAGE	3.2	SQ-2 32	2.03
ESQ	3.5	SD-1	4.10/4.10
ESQ-M	1.2	SD-1 32	4.10/4.10
SQ-80	1.8	DP/4	1.11
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[CS – Thanks for the info, Michael. I'm real impressed with the ASR-10, too, and looking forward to spending some quality time with it here in the near future. Heck, maybe I'll even write something about it.]

[Ensoniq – Yes, only HD disks are faster. We can't change the way normal density disks work.]

Dear Hacker

I have to say I've been enjoying your magazine almost as much as my **VFX** for over two years now. I especially look forward to the Hackerpatch feature from which I've robbed some sounds to add to my personal library. Singin.PNO (March 1991) has a rich tine sound not found in any factory patches. Likewise, K.Emerson (Sept. 1990) provides a punchy organ that comes dangerously close to the real thing. So now I've at least scratched the surface in the world of programming. Which brings me to a couple of questions that maybe you or Ensoniq can help me with. (These are really just tweaks and are probably embarassingly simple.)

1) How do I adjust the glide to produce a portamento effect such as in ELP's *"Lucky Man"*?

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2) How can I change the rate (speed) on a repeating percussion sound such as ORBIT (VFX factory cart: #VPC-101)?

I would also be interested to know if there are any "How To" publications for programming VFX sounds. The factory manuals give you the mechanics of it but blink away the details on how to get the sound you have in your head to the keyboard.

In closing, thanks a lot for a great magazine and as long as I'm asking, how about a Hackerpatch for Heart's *"Magic Man"*?

Thanks,
Stan Chmura
Canterbury, Ct.

[CS – 1) Glide is controlled from the PITCH MODS page, and can be enabled independently for each voice in a given sound (although glide time is a single parameter that is shared by all voices in a program). To simulate the old analog-style portamento you describe, do the following for each active voice in a patch:

A) Select the voice you wish to edit – press the VOICE SELECT button, and select (underline) any voice you wish to edit. Alternately, you can select all active voices in a program for group editing by rapidly double-clicking the VOICE SELECT button.

B) Hit the PITCH MOD button, and select (underline) GLIDE=XXXX. For the type of glide you describe, use the MONO selection; in other words, set GLIDE=MONO.

C) Press the PROGRAM CONTROL button, and adjust glide time to taste. Higher values produce longer glide times, lower values produce shorter times.

2) While I'm not familiar with this particular sound (Orbit), repeat times are controlled by the envelopes, generally speaking. The exception to this is sounds that use the MULTI-WAVE. Hit the VOICE SELECT button and check to see if the sound is using the MULTI-WAVE – if it is, the only way to change the repeat rate is to tune the pitch of the voice higher or lower, depending on whether you want the sound to go faster or slower.

If the voice is using one of the other waves, it's a pretty sure bet that the repeats are controlled by ENVELOPE 3, set to REPEAT mode. You can adjust the speed of the repeats by adjusting some or all of ENVELOPE 3 TIMES – select the voice you wish to edit, and hit the ENV3 button twice to access the TIMES page.]

[Ensoniq – Almost any book on programming (even if it deals with analog synthesis) will be a good source of information for you. Only FM technology is different enough from our wavetable synthesis that you can't apply information to our architecture. Look to the Mix Bookshelf (800) 233-9604 for a good selection.]

TH,

I have been using the **EPS-16+** rack with 2 MB RAM and 1 MB of Flashbank for a year now but my enjoyment of the instrument is greatly decreased by having only 2MB of RAM. Take, for example, the strings series SL-10 through SL-13. When you load just the SML versions of these instruments, you cannot simultaneously hold the pizzicato, tremolo, and harmonics in RAM. Of course you would use the main memory as well as the Flashbank. Also, if you greatly reduce the sample rate it still isn't enough to hold a sensible string section.

So I would like to know if a memory expansion for the EPS-16+ is available or can be expected in the future. Can the processor in the 16+ handle more RAM?

Thanking you in advance for your trouble,
ALfred Karolyi
Mainz, Germany

[CS – No memory expansion is planned (or even possible) for the EPS-16+, unfortunately.

I did an article on memory conservation for the original EPS back in Issue #36, "Surviving the Memory Shortage." If you haven't been a subscriber that long, you may want to contact one of the "Out-of-Print" back issue suppliers in the classifieds for a copy – some of the information presented therein may give you some ideas about how to get more into the EPS-16+ without having to resort to sample-rate conversion.]

Dear Hacker,

I have subscribed for seven issues now and don't feel you devote enough information to **EPS-16+** owners. In your response to Paul Bissel in Issue #88 you gave two back issues as the answer to his wanting more information on altering sounds for the EPS-16+. I think two back issues plus Mr. Shear's in #86 is just not enough coverage. (I wish Tom had explained more thoroughly what the filters, etc. do. Give him two pages next time!)

Anyway, every issue you have "Wave Mutilations" and Hackerpatch for SQs, ESQs, SDs, and VFXs. Why can't you publish a conversion table for the EPS? You'd only have to do this one time and even if the sounds do not end up converting exactly, it would give us EPS owners more things to try. After all, we bought the EPS not only for its sampling ability, but because it is a synth, too. I know I for one can't afford to buy all my sounds nor do I want or have the option of sampling lots of different keyboard stuff.

Please give EPS-16+ owners equal time for their investment in your magazine!

Sincerely,
LJ Nichols
Boston, MA

[TH – On an actual word-count basis the EPS/EPS-16+ receives more coverage than any other instrument. Lately, we've received a flood of samples for review – so the coverage has been tilted more toward reviews than normal. The two back issues mentioned in answer to Paul Bissel's question aren't the only ones that have ever gone into wave manipulation. See also: #43, Craig Anderton on sample customization; #52, Chip Burwell on "getting sounds to swell"; #60 and #64, with Earle Peach covering creative and additive synthesis; #71, Barry Carson on effects tips; #74, with Erech Swanston on arpeggiation. Good ol' Clark even covered it some in #71 and #74. And Tom Shear even made an attempt at an "EPS Hackerpatch" in #86. And – hang in there – Robby Berman is, even as we speak, pounding out an article (or perhaps a short series thereof) on EPS envelopes.]

[CS – We get a number of requests for program conversion charts for various instruments, and I've been hesitant to attempt this sort of thing because:

A) The converted programs will not sound quite like the original, (in some cases, not even close), and people will get mad at me, and

B) It will take an awful lot of time, and my wife will get mad at me (she doesn't see me very often as it is).

I might re-consider my position though, if:

A) I can come up with a really quick easy way to do it, or
B) Somebody pays me a lot of money to do it, or
C) Somebody else does it, or
D) All of the above (preferred method).

I'll keep you posted.]

Dear Hacker,

Thanks for a great magazine. Ever since I got my first Ensoniq keyboard and found your sample copy enclosed, I have anxiously awaited its monthly arrival.

My question is this: I have an **SQ-1+** and have tried to create presets. Maybe I'm not all there, but I'm having trouble following the instructions in the manual. Could someone there turn the lightbulb on?

Sincerely,
Richard Hueston
Piscataway, NJ

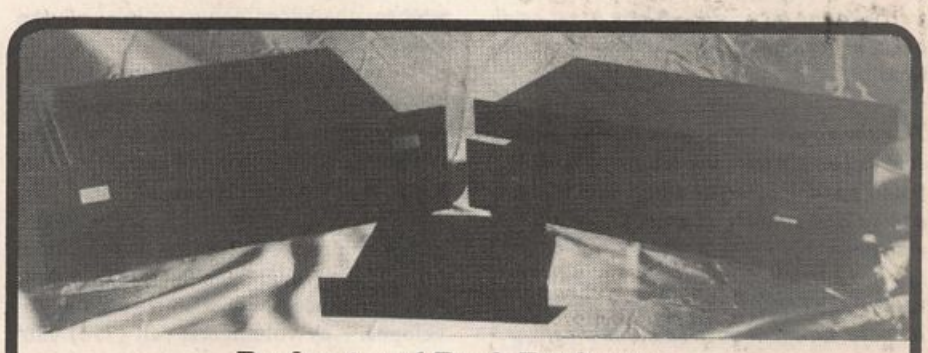
[CS – Creating presets on the SQ series is no big deal – just select the location you want to put the new preset (hit the SELECT SEQUENCES/PRESETS button, and hit the BANK and SCREEN button that corresponds to the location for the new preset), and press ENTER. The SQ display will show:

New Sequence
Location=##.

If this is the correct location, hit ENTER. The SQ will display the default time signature for editing (remember, presets are just sequences with no tracks recorded). Hit ENTER. The SQ will give you a chance to change the default sequence name – I'd recommend naming the preset – it'll be much easier to keep track of later. Hit ENTER once again, and you have a new preset.

The next step will be to set up each track of the preset to do what you want it to do – play internal voices, external MIDI sound sources, or both; volume, transpose and panning information for each track; keyboard range for each track; how the track will respond to the sustain pedal; and so on.

The first thing you'll probably want to do is to assign an SQ sound to your first track. To do this, press the track button for the track that you want to put a sound into. The SELECT SEQUENCES/PRESETS LED will



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begin flashing. You may now select any of the SQ sounds to place in that track in the same way that you'd select the sound for performing – press the BANK and then SCREEN button that corresponds to the instrument you want. Whatever sound you select will be placed into the track you've selected. You can also place other sounds into other tracks in the same way – just press the track button for the track you want to put a sound into, and locate the sound in the usual way.

Next you might want to edit some of the settings – transpose, volume, key range, and so on – associated with SQ sequence/preset tracks. Press the EDIT SEQUENCES/ PRESETS button – its LED will light to indicate that you're in edit mode. There are a number of parameters that you may or may not want to edit for each track of a sequence/preset. These parameters are found in what's called the "Parameter Bank." The parameter bank is accessed from Sequence/ Preset Edit mode (which you should still be in, as long as you haven't pressed any other buttons) by pressing the bank 6 button.

Once you've entered the parameter bank, you can scroll left and/or right to view and edit the various parameters associated with the current track – things like transpose, key range, track status, and so on. If you want to edit the value for a track other than the one you currently have selected, just press the track button corresponding to the track you wish to edit. As long as you're still in the parameter bank, you can move freely among the various tracks to set each of their parameters in whatever way you want.

This should give you a good start at getting sounds into presets, and setting some of the track parameters for those sounds. Of course, you can use external MIDI devices with presets as well – to do this, you'll need to set the track's status to MIDI or BOTH, rather than LOCAL or EXT, and you'll need to make sure that your MIDI channels are set up correctly. The track status and MIDI channel parameters are located along with the other track parameters in the parameter bank.

Good luck, and let me know if there's anything else we can do to help.]

TH,

After reading Anthony Ferrara's book review, "Holding Hands with Alexander," in the October issue, I held my hands along with the rest of me and went and bought the book since I needed (still do) more detailed help with envelopes and filters.

One of the points Ferrara made was "One area that is not covered in this manual is the extensive sequencer capabilities of the **EPS-16+**. Alexander Publishing says a volume devoted to this will be available at some point." According to the last page in the book itself, it says "Some [features] I would have liked to cover but had to forego, for reasons of book size and production schedules, like the nitty-gritty of sample data editing, the synthesizer features of filters, modulation, envelopes, LFO, MIDI secrets. Other subjects may yet get covered in the future. There's a rumor floating around Alexander Publishing of a book about sequencing with the EPS-16 PLUS..."

So, I guess sequencing really is not covered.

Anthony also said, "I feel that it makes a valuable supplement to the factory manual, given the tutorial approach that is taken. It's a good value for the price if what you're seeking is a very basic tutorial approach."

It's a manual supplement that is missing many areas which, to some of us, are important.

Last, and maybe least, Anthony said, "At $24.95, compared to the list price of $9.95 for the original manual, the question is whether the added coverage is worth the cost."

The answer is – No. With the majority of the features not being covered, I don't think it's worth paying two-and-one-half times the price of the original manual.

So, bottom line, a little more accuracy from Mr. Ferrara would have been appreciated. And I *still* need help with filters and envelopes. Any volunteers, call (718) 956-3597.

Abraham Zabalawi
NYC, NY

[Anthony Ferrara responds – Abraham, first I want to thank you for calling and writing since it lets both the editor and me know that someone is actually reading my reviews! In all seriousness, I am very meticulous regarding accuracy when preparing an article for publication, since I realize that people invest their time, money, and effort using the products I review. I also want to give the product's creator/publisher/ producer a fair shake, since so much of their personal energy presumably went into the product in question. Their reputation and my credibility are on the line – I am very aware of that.

I stand by the content and opinion of my review; namely that the book would be a valuable complement to the original 16-Plus manual. Neither I nor the book's authors have made the claim that this book is all-inclusive, and my half-page review was not meant to cover all the bases. However, I feel that the position you take in your letter justifies some explanation on my part. First, you called me at Ensoniq Customer Service and asked for my opinion of the quality of the Alexander book, not about the coverage of specific topics. Second, you purchased the book at a local music store (rather than through mail order), at which time you could have checked the table of contents. On both occasions, you had an opportunity to determine whether the book suited your particular needs – which only you can decide.

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I personally use reviews as an information guide, never as my sole means of evaluation. Reviews, whether positive or negative, are only one person's opinion, and I try to balance several in helping to decide about a purchase. I can't tell you how many times I've read a book or movie review, only to arrive at a totally different assessment than the one I found in print.

Your letter and follow-up phone call serve to illustrate a crucial point – "Et Caveat Emptor" (let the buyer beware)! In all events, I recommend that you research before you purchase. I have had personal experiences similar to yours. Now, whenever I have a question about content, I always call the publisher directly before I make a purchase.

Finally, I believe that Alexander Publishing is planning a second volume on the 16-Plus, which I am told will cover the topics that you are interested in. But, please, don't take my word for it, give Alexander a call. They'll be glad to talk to you themselves!]

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