

Transoniq

Hacker

The Independent News Magazine for Ensoniq Users

Using the DP/4

Clark Salisbury



There are 138 possible sources for modulation of any of the DP/4's parameters, including both MIDI controllers and analog inputs for footpedals and such. Up to eight DP/4 parameters can be controlled at any one time — two for each Unit in a Config (for those of you new to the DP/4, think of the Unit as an effects device and a Config as the way in which four of these effects devices (units) are interconnected, along with the programming for the individual Unit's parameters).

Music technology is just getting too cool lately: digital multi-track, inexpensive DAT recorders, tiny audio mixers with great specs — it gets mind-boggling after a while (of course, my wife thinks my mind is permanently boggled anyway, so maybe I'm not the greatest judge of degrees of boggled-ness). Still, one of the coolest things I've had the fortune of adding to my humble studio lately is a DP/4, the (relatively) new Parallel Effects Processor.

Of course, if you've read the reviews, or better yet, if you have a DP/4, you already know it's cool, so I won't bore you with the details. Still, the DP/4 is such a great creative tool that I thought it might be fun to share some stuff. So here goes.

Many effect devices offer some form of dynamic control — allowing you to control the reverb mix from your keyboard's mod wheel, for example, or chorus rate from a MIDI footpedal. Not only does the DP/4 offer dynamic control of this type, you can assign this control to any parameter. This opens up some interesting possibilities, both in the studio and in live performance.

The 8 controllers you can use are assigned globally, from the System page. Once assigned, each controller is then available to modulate any parameter in any Unit. Let's take a look at a basic application — using a mod wheel to control DP/4 parameters — to get a sense of how this works.

It will be easiest to hear the effects we'll be controlling if we listen to just a single DP/4 unit, so select "Config 52 1U Psets" before trying these examples. Also, to use a MIDI controller with the DP/4 you must first make sure that "Control Chan" (parameter #35 in the System-MIDI menu) is set to the same MIDI channel that you are sending the controller on — in this case, MIDI channel 1 — and that MIDI is enabled (parameter #36). Otherwise, the MIDI controller will not be recognized by the DP/4.

First, connect the MIDI out from your keyboard to the MIDI in on the DP/4, and set the keyboard to transmit on MIDI channel 1. The default settings for the DP/4 include having the mod wheel assigned as MIDI controller #8, and DP/4 unit A set to

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respond to controllers sent on MIDI channel 1. Therefore, assigning DP/4 Controller8 to control one or more DP/4 parameter(s) in Unit A will allow you to vary the parameter(s) from the mod wheel of the keyboard you've connected. Here are a couple of examples:

To control reverb mixing

- First, load unit A with a reverb program; press Select, then Unit A. Let's use #10, Summer Hall, so use the Data Entry Knob to scroll to this program, then hit the Select button to load the algorithm.
- Press Edit and scroll to parameter #23, and set the Mod 1 parameters to the following:

Param #:	Parameter:	Set to:
23	Mod 1 Src=	Cntrl-8
24	Mod 1 Destination	Parameter=002*
25	Mod 1 Param Range Min	00%
26	Mod 1 Param Range Max	99%

* Setting this parameter to 002 will control the volume of the reverb. If you are using the DP/4 with the source signal patched directly in, as you would if you were using it as a guitar processor, you may have better results setting this parameter to 001, effect Mix.

You can use parameters 25 and 26 to adjust how much effect the mod wheel will actually have on the reverb mix; setting the Max range lower and/or the Min range higher will restrict how far in one direction or the other the change will be. Note, too, that once you've set up these basic parameters, you can control any parameter in this effect simply by re-assigning parameter 24, Mod 1 Destination. For example, if you assign this to parameter 03 you can control reverb decay time.

Now let's take a look at another example of using the mod wheel to control a DP/4 parameter — in this case, chorus rate.

To control chorus rate

- Press Select, then Unit A and scroll to effect #30, Lush Keys.
- Press Edit and scroll to parameter #23, and set the Mod 1 parameters to the following:

Param #:	Parameter:	Set to:
18	Mod 1 Src=	Cntrl-8
19	Mod 1 Destination	Parameter=003
25	Mod 1 Param Range Min	00%
25	Mod 1 Param Range Max	70%*

* A value of 99% for this parameter makes the chorus sound pretty wobbly at maximum setting.

Just remember that you can control any parameter — filter cutoff, rotary speaker rate, compressor threshold, delay time, you name it. And, of course, you can use other controllers besides the mod wheel to vary effect parameters — use pressure, the pitch wheel, timbre control, patch selects, and so on.

Of course, you don't have to use MIDI to control effect para-

eters. As a matter of fact, if you use a footswitch or control pedal with the DP/4, the DP/4 will translate your pedal moves into MIDI data, which can be recorded into a sequencer. Assigning a control voltage pedal or foot switch works much the same as assigning a MIDI controller; the main difference is that you'll need to assign the foot pedal or foot switch as a controller from the System-MIDI menu, parameters #37 through #44.

One overlooked feature of the DP/4 is the ability to create "Songs" — sequences of presets that can be chained together for quick access via footswitch during performance. This feature makes it easy to organize and "cue up" groups of DP/4 presets for quick recall during performance. You could create a song and assign a footswitch (the SW-5/10 foot switch is recommended) to control preset selection. Here's how:

- Press System-MIDI and scroll to parameter #45. Set the following values:

Param #:	Parameter:	Set to:
45	DP4 Footswitch1=	Song Preset Up
46	DP4 Footswitch1=	Increment song

This sets Foot Switch 1 (on the right) to step sequentially through the 5 presets defined in the current song. Pressing Foot Switch 2 (on the left) will advance to the next song.

- Press the Right Arrow button to move to the Song Editor (parameters #47-49).
- Use the three parameters on this screen to define whatever 5-step songs you want. When you are done, use parameter #47 to reset to Song #01.
- Now each time you press Foot Switch 1 the DP/4 will select the next preset in the current Song, and will "wrap around" back to step 01 after step 05. Pressing Foot Switch 2 will advance to the next song.

Finally, here's an idea for you guitar players who use the DP/4. You know how it takes most effect devices a moment to reprogram themselves when you call up a new effect? And you know how sometimes you need to be able to go from, say, a clean rhythm guitar sound to a distorted solo sound rather quickly? Here's a way to do it:

Program one (or more) of the DP/4 footswitches to act as effect bypass buttons. Parameter 06 on the System page allows you to assign a controller to bypass Unit A; parameter 13 assigns a controller to bypass Unit B; parameter 20 assigns a controller to bypass Unit C; and parameter 27 assigns a controller to bypass Unit D. Once you've assigned a footswitch (or whatever) to bypass one of the units, call up a preset that includes a distortion sound. Bypass the Unit that's responsible for the distortion effect (either by pressing the Unit button, or hitting the bypass switch which you just programmed), and go ahead and jam using the clean sound that remains. When it's time to tear into your solo, just hit your bypass switch, and the distortion effect kicks in. And since the DP/4 doesn't have to re-program anything, it's pretty much instantaneous.

So that should give you some ideas for stuff you can do with the DP/4. Of course, we're not even scratching the surface here — I'll have more to say in future columns. Be well. ■

Front Panel

RND (🎵🎵🎵)

Ensoniq News

Ensoniq is pleased to announce the availability of the **ASR-10 rack-mount sampler**. The ASR-10R has the same features as the keyboard version with a total of 8 outputs and SCSI standard. Features include up to 31-note polyphony, stereo sampling, 50 effects algorithms, advanced resampling options, a virtual 16-track sequencer, time compression/expansion, and more. Also new for the rack mount is the ability to trigger samples from the ENTER key for easy auditions when a MIDI keyboard isn't available. Also, please note that the rack mount does not have the mic/line switch found on the keyboard version. Suggested retail price: \$2895.00 (US).

We are also pleased to announce new pricing for our first three volumes of sounds on CD-ROM format. *CDR-1* through 3 now have a suggested retail price of \$199.95 (US). *CDR-1*, which is available now, contains SLT-1 through 13, ESS-1 through 12 (Signature Series) and the Essential Sounds that came with the EPS-16 PLUS. This is the equivalent of 181 floppy disks, which would have cost you over \$1,400 — you save \$1,200! *CDR-2* will be available at the end of February, and contains SL-1 through 20 and ESS-13 through 20, as well as some select demos that were released to our dealers over the last year. *CDR-3* is all new large instruments developed especially for the ASR-10 from our extensive library of sampling sessions, taking advantage of the ASR-10's expanded memory and advanced effects capabilities. *CDR-3* will require at least 10 Meg of memory, and will be available at the end of March.

ASR-10 accessories now available:

SP-3 SCSI kit featuring advanced opto-isolation for silent data transfers via SCSI. This kit can be installed by any Authorized Ensoniq Repair Station, and includes an upgrade to O.S. version 1.50 (ROM and disk), SCSI Operations Manual, listing of approved SCSI devices and a complete system diagnostic. Suggested retail (including installation) \$349.95.

OEX-6sr: This new design of our 6-output expander allows for mounting on mic stands, drum hardware, and rack shelves for better integration into your MIDI set-up. Suggested retail: \$249.95.

Recent Sound library releases:

ASR-10/EPS-16 PLUS

SL-19 Gospel Choir sounds — Ensemble voices from the Howard McCrary Singers, who have worked with Michael Jackson, Stevie Wonder and others, and pop vocals from Philadelphia/Nashville session singer, Ellen Britton. 5 disks and a sound manual. \$39.95 suggested retail.

SL-20 French Horn — Solo and ensemble French horn sounds. 5 disks and a sound manual. \$39.95 suggested retail.

ESS-19 Richard Souther Signature Series — Gospel/World Music/Electronic virtuoso adds his unique talents to our growing roster of Signature Series artists. 3 disks, a sound manual, and unique package art from renowned artist, Peter Max. \$39.95 suggested retail.

ESS-20 Phillipe Saisse — Session player/composer/arranger who has worked with Nile Rodgers, Dave Sanborn, Joe Sample and others.

This collection includes a complete re-creation of a track Phillipe composed especially for this release, with unique loop and guitar strum techniques that Phillipe has graciously shared with you. Includes 5 disks, a sound manual, and unique package art from renowned artist, Peter Max. \$39.95 suggested retail.

SQ/KS Instruments

EX-1 — a new card featuring 180 sounds, utilizing the waveforms in the expansion wave category of the 32-Voice SQ and KS-32 instruments. Suggested retail: \$99.95 Please note: these sounds are not for use in 21-voice SQ instruments.

Service Announcement: Effective February 4, 1993 Ensoniq has discontinued the 32-Voice upgrade program for the VFX-SD and 21-voice version of the SD-1.

Hacker News

Correction Dept.: In Robby Berman's article last month on the VFX-sd & SD-1 event editor (which actually applies to most Ensoniq sequencers), somehow along the way we changed "page 12-15" to "pages 12 - 15." This was *not* a good idea. Page 12-15 is correct.

Transoniq-Net News: Pat Finnigan has expanded his area of helpfulness to include the KS-32 and SD-1.

Call for writers: We're still looking for DP/4 material!

Call for programmers: We still could really use some more Hacker-patches for the SQ-1/-2 & KS-32.

We'd like to welcome some new advertisers: **Ramtek** — who's taken over the Eltekon line of hard drives, **BahmanS.Saless** — merchant of J. S. Bach sequences, and **Jeffrey Fisher Music** — who'll help you sell your music skills.

And on a lower note... **Sky is the Limit**, whose ads appeared briefly in these pages, seems to have a disconnected phone number. Please let us know if you know anything about them or have had problems.

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, (NJ) 6 – 8 pm EST.

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

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

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

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

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

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

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

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

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

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

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

ASR-10 Sampling Basics

– A Little Golden Book Approach

Barry Carson

In a recent conversation with the First Officeress of the Good Ship *Hacker*, the topic of sampling came up (doesn't it always?). It turns out that with the advent of the incredible new ASR-10, an old problem has returned to haunt us. As with the '16+, and with the EPS before that and with the Mirage before that, the ASR-10 is a box of the latest high-tech stuff optimized for one purpose: to capture sound waves, store them as computer data, manipulate them and play them back from a keyboard or other MIDI controller, activities we (with enormous affection) refer to as "digital sampling" or "sampling" for short. But, as it happens, most ASR-10 users (like the users of most sampling instruments) are just not sampling. Faced with the obvious complexities of the ASR, they simply opt to play samples made by Ensoniq or third party programmers. This is really too bad. Not only is sampling not as hard as it looks, but it is truly a source of good, clean, hardy fun. It should also be noted that while the ASR (which can play '16+ and EPS samples) has a huge and largely excellent library, there's really nothing like having your own individualized sounds to make your music sound like nobody else's. This is the real power of owning a sampling instrument. I mean, if you don't sample, you may just as well own a (yuck) sample playback instrument (no letters please).

The purpose of this series of articles is to go through the basics of digital sampling. While we will be focusing on the ASR-10, sampling on the ASR is, in practice, very much like sampling on the EPS, and, in theory, sorta like sampling on the Mirage. This could be a good review session for all you samplists out there.

The basic questions that people ask me most often have to do with how much memory is needed, what sampling rates mean and the relationship between these two. So, let's take a look.

Memory

The question of memory used to be much more of a concern back

in the early days of sampling when a 64k block of memory was considered huge (and the Ensoniq Mirage, one of the first and most popular sampling keyboards, actually had two of 'em!). 128k proved to be enough memory to store some great samples, but running out of memory was always a possibility. Ensoniq upped the ante to 480k with the EPS and 1 meg or 1000k with the '16+, both of which could be expanded to 2 meg. The ASR comes with 2 meg and can be expanded to 16 meg using standard SIMMs chips, which are relatively inexpensive. A little math suggests that a fully loaded ASR-10 will have the memory of 125 Mirages!

Nice figures for sure, but what do they mean? The amount of memory in your sampler directly affects the length of time you can record a sample and the fidelity of this recording. For example, a stock ASR can record a sample over 20 seconds at very high fidelity; at slightly lower fidelity, the sample can be over 30 seconds long. A fully expanded ASR can record at CD fidelity for three minutes or, with a little lower fidelity, for four and one half minutes!

Plus, here comes another curve, the ASR-10 can sample in stereo. Just as your stereo amplifier actually has two amps built in (one for right and one for left), a stereo sample is actually two samples (one for right and, well, you get the picture). This means that the amount of stereo sampling time is exactly half the amount of mono sampling time: one and one half minutes of CD fidelity, digital stereo sampling one a fully loaded ASR, for example.

Nice figures again, maybe, but so what. For making high quality, high fidelity samples of just about anything, a stock ASR gives you more than enough memory. I've done a ton of sampling in my day, and I can't imagine ever needing more than 2 meg to sample anything. If, of course, you want to do lots of multi-timbral sequencing using lots of big stereo samples, or you want to mix down your band's latest single to digital stereo on your

ASR, you may want to expand all the way to 16 meg, but you won't need to in order to start sampling.

Sampling Rate —

As we mentioned in the last section, the ASR gives you option of choosing the level of "high fidelity" you wish to record in. How this is done is by selecting a sampling rate, that is, the number of times the sound is sampled per second, which determines the frequency range of the sample. The highest frequencies sampled will be 1/2 the sampling rate. The ASR-10 has two sampling rates — 29.76 and 44.1 kHz. Since humans can only hear up to about 20 kHz and since half of 44.1 kHz is 22.05 kHz, the ASR can reproduce just about anything a person with perfect hearing can hear. As a matter of fact, the frequency rate of the ASR at the 44.1 playback rate is indeed 20 kHz. The fidelity of the ASR at this high sampling rate is just about equal to that of a CD player (CDs are also sampled at 44.1).

Sounds great, eh? Why bother with the lower sampling rate then, you ask? Well, there're a few reasons. First, many instruments have no overtones that reach to 20 kHz; sampling a bass drum or

electric guitar at the 44.1 sample rate is often a waste of memory. Second, many situations don't demand the highest fidelity. If you play hard rock in a noisy bar through a junky mixer, an industrial quality amp and two Fender Bandmaster speaker cabinets, you may not need to use the highest sampling rate. Third, many people can't hear much above 15 kHz anyway (especially if they played for long in the aforementioned band). The ASR will let you convert the sample rate of a sound after you have recorded it, so it never hurts to sample at the higher rate, convert to the lower rate and see if you can hear the difference.

So, we have our sample rate set and we have our memory set. Next time we get to set up for an honest to bejees sampling session and ponder the moral and ethical ramifications of our decision to sample in either stereo or mono. See you then. ■

Bio: Barry Carson has sampled everything from lutes, viols and krumphorns to Vox combo organs and digital synthesizers. He has sampled on the Mirage, EPS, EPS-16+, and ASR-10 — as well as the Roland and Prophet samplers. He is eagerly awaiting the 10th Anniversary Mirage reissue.

HYPERSONIQ NEW PRODUCTS

WAVEBOY Industries announces *The Parallel Effects Disk* for the ASR-10. By popular request, the WAVEBOY Parallel Effects Disk is now available for Ensoniq's new ASR-10 sampler. All the effects are essentially the same as in the original EPS-16 PLUS version. (See Craig Anderton's glowing review in the April '92 *Transoniq Hacker*.) The new disk, called version 1.2, will work on both the ASR-10 and the EPS-16 PLUS. The disk contains 16 different parallel effect algorithms plus the "TIME-DICER." The parallel effects each contain four sub-effects which can process four different instruments simultaneously. The sub-effects include chorus/flanger, guitar effect chain, delay and reverb/ambience. The TIME-DICER is a pitch-shifter plus reverb which can use the keyboard (or MIDI) to transpose the pitch of a signal coming through the audio input. It can also time-stretch a sound without changing its pitch. The Audio-In Effects disk is still available only for the EPS-16 PLUS. Owners of the original PED can upgrade to 1.2 for \$20. The WAVEBOY Parallel Effects Disk 1.2 is available by mail for \$39.95. For further information contact: WAVEBOY Industries, P.O. Box 233, Paoli, PA 19301, (215) 251-9562.

Ramtek, Inc., the Livonia, Michigan-based maker of SCSI based RAM disks, subsystems and other products for the computer market, has expanded its product line to serve the digital recording and sampling market. The firm has hired the development and technical staff of the now-defunct Eltekon, Inc. to produce SCSI based, rack-mounted storage subsystems. These include optical, CD-ROM, fixed and removable drives. The new Ramtek systems incorporate many of the features of the Eltekon product line, including shock mounting, quiet cooling fans and others. Owners of Eltekon products can look to Ramtek for repairs and

upgrades. Ramtek has also opened a European operation with a warehouse and sales and technical support located in Denmark. For further information contact: Ramtek, 30057 Orchard Lake Road, Suite 225, Farmington Hills, MI 48334, phone: 313-462-4181, Europe: 011-45-312-442-33.

Midwest Digital Services announces *Power Tracks* — over 350 of the best sequences from Glen Miller to Deep Purple. A free catalog and a free demo sequence are available. All orders include track sheets with sound assignments, tempo and tempo changes, key signature and changes, and a cassette tape of the original sequence being played through the synth. Current formats include the SQ-80, VFX-sd, SD-1, Cakewalk, and Standard MIDI File. The EPS is coming soon. MDS says, "Well, here we are — the new kid on the block and we don't dispute the fact that we plan on being the worst bully you have ever imagined! Our motto is TO LET THE ROCK ROLL!" For further information contact: Midwest Digital Services, What Cheer, IA 50268. Phone: (515) 634-2019.

Giebler Enterprises announces the *ASRSMF* sequencer conversion package for the Ensoniq ASR-10. *ASRSMF* converts ASR-10 sequences into Standard MIDI Files and Standard MIDI Files into ASR-10 sequences. Program changes and drum note assignments can be re-mapped and controllers can be filtered out during the conversion. An IBM-PC compatible with a 1.44 MB 3.5" floppy drive is required. *ASRSMF* is available for \$54.95. Giebler Enterprises also announces an update to their *Ensoniq Diskette Manager (EDM)*. *EDM* is a software package that reads, copies, formats, and displays Mirage, SQ-80, EPS, EPS-16+, VFX-sd, and SD-1 diskettes on an IBM-PC. The new Version 1.0.6 adds the ASR-10 to the list and increases speed and individual file copying capabilities. (\$34.95.) For more information contact: Giebler Enterprises, 8038 Morgan Road, Liverpool, NY 13090-2009. Phone: 315-652-5741.

Making BigBux Doing What You Do Best

Jeffrey P. Fisher

Okay folks, it's time for all your musicmaking gear to start making you some more money. Whether you're in a band or just a serious hobbyist, what do you think about making money composing scores? I'm not talking about Hollywood here. I'm talking about another market for original music that's getting bigger every day and it's right out there.

Corporations make videos and slide presentations for sales, training, and other communications. Local broadcast and cable tv shows need music for themes and underscoring, and local commercials on radio and tv always need jingles and catchy music scores.

They all need music. And you can make good money selling them yours and your recording services. Once you are fully aware of this market and can develop a plan to reach it, you can see possibilities of making some real money doing what you do best. It is a strong market that can put cash in your pocket while you do something you love.

"Find out what you like doing best and get someone to pay you for doing it."

— Katharine Whitehorn (b. 1926), British journalist

This is what you'll need to do:

- Prepare your demo/sample reel
- Find client prospects
- Market to prospects
- Produce and record your scores
- Take care of business

I'm assuming, of course, you already possess the necessary composition and technical skills to write and record music. This is not about how to write scores. This is about how to sell them.

One word of caution, though. If you think your music is art, then making and selling commercial music is not for you. Your music is your product and all the traditional business rules apply. If you can't stomach the fact that your music can be packaged and sold like gym shoes, this business is not for you.

Yeah, you need musical ability and originality. But you also have to have some business savvy. You'll be selling and running your music business just like any other business. In fact, it may amaze you how little of your total time is spent actually composing. I don't say this to you to scare you off, but rather to bring home the realities. If you don't have any clients, you can't sell your music. Your music is gonna be there, what you need to do is find the market.

Setting Up Your Project Studio

So do you need a state-of-the-art studio to make money scoring soundtracks? Chances are your existing home equipment arsenal will get you through most of your assignments. If you have an Ensoniq keyboard or two, a drum machine, a sequencer (hardware or software), a multi-effects processor or two, mixer, quality mixdown deck (1/4" or DAT), and a decent cassette deck, you're okay.

Since I'm talking about mostly instrumental music, your MIDI tracks should cover most of your work. However, if you play another instrument (guitar, sax, etc.), you might want to add a cassette multitrack that can sync to your sequencer and handle the acoustic instruments.

Your composition skills will always outweigh your equipment list. As long as you can get a clean quality recording on tape, you'll be on track — the real skill is in the writing, not the equipment.

Jan Hammer wrote all the music for *Miami Vice* from his home studio with basically one workstation (granted it was the Fairlight). He also used an old Memorymoog, DX7, and live guitar and percussion. Today, a workstation like the ASR-10 or SD-1/32 is almost as powerful as the old Fairlight. Together, the SD/ASR are probably even more so.

Bethune: The Making of a Hero composer, Alan Reeves, said in an interview in *MIX* magazine, "Any good composer who has a sampler or two — maybe some sample playback machines, some analog synths, even some FM synths — can do practically anything." He says that even an epic film like *Bethune* can be done at home on modest equipment.

To make the most money (and keep your prices competitive), try to do as much as you possibly can yourself — write, play, record, produce, and mix. The more you farm out the less you make. If you can handle almost anything that comes along with your own skills and equipment this'll keep the overhead and prices low, and clients get a better value.

Here is my best advice — start small and make the best with what you have. Look for bargains. It pays to shop around and look for close-outs. Last year's merchandise still does what it always did. It might not be the latest and greatest, but if it gets the job done — if it allows you to sell more music — it's worth the price.

Just before the SD-1 hit, the VFX-sd was selling for about 50% of the original price. With Ensoniq's upgrade path, you can

turn it into the newest model for a small investment. You upgrade when the dough starts coming in.

Here's a possible simple, effective, workable, and profitable project studio:

- Ensoniq SD-1/32 synth workstation with built-in sequencer and effects.
- Yamaha DX-11 FM synth
- Yamaha RX-17 drum machine
- Casio CZ-101 (2)
- Korg pre-MIDI drum modules (grainy, funky sounds!)
- Tascam 688 MIDISTUDIO with 8-track cassette and 20 input mixer
- Various outboard gear — compressors, gates, reverb, etc.
- Several guitars (acoustic and electric) and an electric bass
- And lots of miscellaneous ethnic percussion (cabasa, bells, guiro, tabla, rain stick, tambourine, kalimba, etc.)

For those who are just jumping in, a MIDI workstation is the way to go. Ensoniq SQ-1, SD-1, EPS-16, or ASR-10 all-in-one boxes can handle most anything that comes along. With a workstation under one arm, add a good mixdown deck (even high-quality cassette) and you're on your way. Then as you sell more music, invest a percentage of every sale into increasing your equipment arsenal. Choose those items that will help you sell more music. You're in business now.

If you're really on a tight budget, the easiest way to make an old synth sound new is to add effects. A single multi-effects processor brings new life to old gear. I run my CZ-101 through my GSP-5 and the result is almost amazing. Most modern

synths of the workstation variety use effects as an integral part of their sound anyway. Add something like the DP/4 and you can make four archaic synths sound like new. But don't only look for the expensive solution, get creative. Just a cheap chorus pedal used for guitars can do wonders for an ESQ-1.

To MIDI or to Multitrack?

I use an 8-track deck because I also do jingles, various kinds of audio production, songwriter/band demos, and audio-for-video sweetening. Typically, I use my SD-1 to cover all my parts and then add my other synths for doubling and other effects. Guitars and percussion go on the multitrack with the SD-1 synced to tape using FSK MIDI sync. If you want more versatility, I suggest getting a 4-track cassette-based multitrack. These little machines can help you in many ways (doubling up parts, adding narration or sound effects, and more).

You can't own everything. Nor should you want to. Take a long look at your skills and your budget. Buy what you need to get the job done right. And nothing else. Build a system that works for your particular strengths. You can always rent equipment when necessary or just pack up your gear and head out to a commercial studio to record.

Next we're going to tackle how you're gonna pay for all your equipment. ■

Bio: Jeffrey Fisher scores jingles and sound designs for documentary, drama, and business TV. He is also the author of the book, "How to Make Big Money Scoring Soundtracks — Your Complete Guide to Writing and Selling Original Music."

Taming the Hydra

Modulation on the VFXs and SDs

Jim Samp

In the process of learning how to use my VFX-sd over the last two years, I have often been reminded of the mythological Hydra. When warriors attempted to slay the aquatic beast by severing one of its many heads, two more would grow back in its place! I have described similar SD-type adventures to my musician friends, some who were considering buying VFX-sds for themselves.

"It's unreal," I gasp. "Each time I think I have some variable conquered, I only discover a number of forks in the road leading to even more prospective discoveries. It's like a kaleidoscope." I gasp again, shaking my head. "It's unreal, unreal..."

Let's take a few hacks at this techno-terror and see if we can make some headway (ahem). This information applies to any type VFX or SD. Draw your swords and let's go!

Her I will focus on head #4,176, otherwise known as the Mod-Mixer, or mixer for short. As you may already know,

you have 15 modulation sources to affect pitch, filters, volume, transwave cycles, effects parameters ... (see what I mean by all the heads?). Here is a list of the mod sources:

LFO	CV Pedal
Envelope 1	Pitch Bend Wheel
Envelope 2	External Controller (guitar, wind, etc.)
Mixer	Pressure
Noise	Mod-Wheel
Velocity	Pressure & Velocity
Keyboard	Pressure & Wheel
Timbre	

We will focus on pitch modulation for now. Since pitch changes are very easy to recognize, this is the best way to understand what your modulators are doing.

Call up the very first sound in bank #6 of RAM — "ORGANIZER." Go to the programming section and hit the

effects button. If it is not already underlined, select the effect name parameter. Scroll through the effects names until you find ROOM REVERB-1. Now stop at the performance section and hit PATCH SELECT twice. On this page, you can choose if you want the typical channel pressure (CHAN), Poly-Key (KEY) pressure, or no pressure (NONE). Press the soft button over ORGANIZER. Since organs do not respond to pressure, this is set to NONE. But we want pressure, so use the IN-C/DEC buttons to find KEY.

Go back to the Programming section and push SELECT VOICE. Now the screen shows 6 waves which are available to make up the sound. Heads — every one of 'em. Double click the upper right button (ORG-V.1) to solo it. This is a must since you do not want to hear the other waves; only the one you are working on. Now push the PITCH-MOD button in the Programming section. On the screen you will be able to select a modulation source. You may select from the 15 listed above. Since this article is about Mod-Mixer, guess which we'll select? Underline MODSRC and scroll until you find MIXER. Select MODAMT and set it to +62. This makes the pitch change somewhat extreme, making the modulators effect very obvious. You can always come back and tone it down after you are sure what it is actually doing, or you may find you like it after you plumb the programming depths of the mod-mixer.

Make sure ENV 1 and LFO are set to 00. A fast way to bring a positive/negative parameter to zero on the VFX-SD1 is to press the decrement button, hold it, press the increment button and release them both at the same time. Ignore the GLIDE setting unless your name is Sam Mims. If it is you can ignore this article.

Now we finally leap into the elite stage of programming; the Mixer. Go ahead, hit the Mod-Mixer button. On the top line of the screen you may select not one, but two mod sources to affect the pitch at the same time, real time or otherwise. Let's use PRESSURE for SRC-1, and WHEEL for SRC-2. I know, I know. I can hear you say, "But you can get those two together by selecting the Pr+Whl modulator without even using that mixer thing." True, but that's just the beginning. Here's where things really get interesting. The modulator used for SRC-1 (in this case, pressure) is unaffected by the mixer. It is the same as using pressure as the modulator on the PITCH MOD page. Mod SRC-2, however, is nothing short of incredible. And fun, too! The bottom line contains two parameters which affect only SRC-2, not SRC-1 (as stated above).

First is the scale setting. This allows you to regulate the potency of SRC-2 compared to SRC-1. If you set it at 1.0, SRC-1 and 2 will be equally effective. If you set it for 0.5, it will be half, or 50% as effective as SRC-1. Set it for 2.0 and it will be twice as strong as SRC-1, and so on. I will explain this more thoroughly later. The range is from 10% to 800% of SRC-1. This is why this feature is called the mixer. It not only combines the two mod sources, but balances them to your

desire. Let's set it for 1.0 for the sake of our sanity. What you do after you read this article is your own business.

Ah, yes. Now we come to the shaper. If you are new to synthesizer programming, you may have some difficulty grasping this concept. As is often the case, the best way to understand some things is to try them. For now, though, it will help a great deal if you would open your manual to page 8-37. If you do not have your manual, look on with a friend. If you do not have a friend, be thankful you have the *Hacker*.

The sixteen boxes on page 8-37 illustrate sixteen different shaper curves that plot a course for the modulator of SRC-2 to follow. For instance, if you use LATERISE your mod wheel will do nothing in the first half of its travel, but at the halfway point it will start to raise the pitch rather quickly. You can relate this to the picture. QUIKRISE is just the opposite. The pitch hits the ceiling halfway through the wheel's travel and then stays there, even if you continue to push the wheel. With CONVEX-1 the pitch rises quickly at first but tapers off. CONCAVE-4 does the opposite.

These are not envelopes that control the pitch, but they dictate how much the wheel will change the pitch at different segments of its travel.

LINEAR is like not using the shaper at all; it is just straight-ahead modulation, if you will. The QUANTs make your pitch raise in steps, kind of like "Sample and Hold." The higher the number, the more (and smaller) steps you will have. Try it!

And finally, we have SMOOTHER. This one almost defies explanation. Almost. I would describe it as a buffer or a cushion. If you hold a note and very rapidly roll your mod wheel back and forth, it seems as though your wheel has been attached to the pitch with a slinky! The pitch always takes a second to catch up to the wheel. Wow!

Now that you have allowed me to lead you out to the rocky coast to do battle with the thing, see what you can do on your own. The possibilities are indeed endless. If you want to find examples of the mod-mixer in factory programs, use the mod wheel to produce the falloff on "SOLO-TRUMPET" or "ALTO-SAX." Or how in the world would you produce the mind blowing "WOW SOUND" without a mod-mixer? How about "SAMPLE + HOLD" or "GROOVE-1" from VPC-101? Or "STARJAMHOLD"???

In part II, I will offer some practical applications in the realms of panning, transwaves and who knows what else! Have a great day! Have two. ■

Bio: Jim Samp's wife and two sons play French Horn, trombone and drums, respectively. He cannot understand his family's allegiance to acoustic instruments. He enjoys sequencing and performing music in his church. Although he loves synthesizers, he refuses to say "Roland" or "Korg."

An EPS/ASR-10 Rhythm Directory on Floppy Disk

Part II

Phil Rogers

In last month's Part I, I covered some of the basics of setting up and moving around in directories and subdirectories. Ok, now let's go pop in the disk we created and make sure we're in the root directory. We should see "FILE 1 RHYTHMS." Press ENTER/YES to enter the RHYTHMS directory. We're now going to create, within RHYTHMS, a subdirectory for each of several beat books that I own (see last month's bibliography), to give you the idea of how this works. So, if you want, follow along, and push all of the buttons — even if you don't own all or any of the books, the exercise will be valuable. You could of course carry out the exercise, only substituting your own file names, but that might prove to be rather confusing the first time through. Anyway, here we go...

Press COMMAND then SYSTEM. Press ENTER/YES and name the new directory "ROLAND" (short for Roland Drum Machine Rhythm Dictionary: the EPS is a drum machine too — am I right?), and press ENTER/YES. Since we're still in the RHYTHMS directory (we haven't made any moves to backup out of it or to go into the new ROLAND subdirectory), press ENTER/YES to repeat the command and name the next new subdirectory "MEL BAY" (for *Mel Bay's Funk Drumming*), and press ENTER/YES.

We'll add one more for good measure: press COMMAND, ENTER/YES, name the new subdirectory "DIGITAL" (for *The Art of Digital Drumming*), and press ENTER/YES one more time. Now, press LOAD and view "FILE 3 DIGITAL." Use the up/down buttons to view the other files (subdirectories) in the RHYTHMS directory, namely "FILE 2 MEL BAY" and "FILE 1 ROLAND," and to toggle between them and "BACKUP TO ROOT." Use the side arrow buttons to see that each of the three new subdirectories has "0 FILES" in it, and to verify again, when "BACKUP TO ROOT" is showing, in fact, "THIS DIR = RHYTHMS."

Now pull up "FILE 1 ROLAND." We still need to create a couple more generations of subdirectories in order to illustrate several more points regarding how subdirectories work in general, as well as in the particular context of our "encyclopedia of groovology." For example, I usually make a separate subdirectory for each chapter of the book, and further subdivide those subdirectories if there are to be more than 38 sequences notated for that chapter, and/or if the chapter subheadings seem like they would be important descriptive categories in and of themselves. (Don't get too carried away, though.)

We'll use the Roland book for our example, since its chapter subheadings are not in any way esoteric, and since it's been around for a while and has a pretty broad approach (a lot of you may already own it). *The Roland Drum Machine Rhythm Dictionary* has the majority of its rhythm patterns notated two dif-

ferent ways: one using what they call "Drum Sounds" (including kick, snare, toms, cymbal, hi-hat, etc.), and the second using "Latin Sounds" (claps, congas, timbales, bongoes, cowbells and shakers). Note that if you have another favorite drum kit that is configured across the EPS's keyboard differently from the POWER DRUMS (or whichever one you saved to memory earlier on), and you want it to play these same sequences, you'll either have to reconfigure it (we don't want to hear the ride cymbal sounding instead of the floor tom, and so on) or else add an additional (third) subdirectory to go along with each set of [Drumsounds / Latinsounds]. I suggest that you reconfigure, otherwise you'll need also to re-record each sequence another time as well, on a separate track.

Anyway, with "FILE 1 ROLAND" showing, press ENTER/YES. "BACKUP TO RHYTHMS" should appear, since it's the next directory on up the chain. If you want to, press the right or left cursor button to verify we're still in Roland, then press COMMAND and ENTER/YES. Name the new subdirectory "JAZZ." Press LOAD to see the results: "FILE 1 JAZZ" appears. Go through this COMMAND/SYSTEM/CREATE DIRECTORY three more time to create "FILE 2 LATIN," "FILE 3 ROCK," and "FILE 4 FILLS." Press LOAD and pull up "FILE 3 ROCK" using the up/down arrow buttons. Press ENTER/YES and we are in the ROCK subdirectory of ROLAND.

Again press COMMAND and ENTER/YES: name the subdirectory "DRUMSOUNDS" and press ENTER/YES again. Repeat the command and name the second subdirectory of ROCK, calling it "LATINSOUNDS." Press ENTER/YES. By now, our directory is nearly as complete as we need it to be for the purposes of this tutorial, so let's check our work:

Press LOAD and *voilà*: We see "FILE 2 LATIN SOUNDS." Press the up/down buttons to toggle to "FILE 1 DRUMSOUNDS," and "BACKUP TO ROLAND" (stop there). Press the left/right buttons to see "THISDIR = ROCK." Press ENTER/YES to see "BACKUP TO RHYTHMS," and once more to view "BACKUP TO ROOT."

You see, it's very easy to travel up the hierarchy of subdirectories. All roads lead to ROOT, so to speak; if once you see the phrase "BACKUP TO..." you can just keep pressing ENTER to back up through the various levels to the root directory. It's when you're going back down that you need to know the path to get where you want to go, which is why it can be important to have somewhat descriptive subdirectory names. For large directories (especially when working with a hard disk) that aren't just as "single purpose" as the one we're working with here, keeping a schematic map of the entire directory in a notebook becomes nearly indispensable for finding your way through the intricacies of a many-branching series of subdirectories.

When you're headed up toward the root, at any level, how do you change your direction to enter into a subdirectory? It's easy: when the LCD reads "BACKUP TO (anything: you name it)" you simply press the UP arrow, and the files available to enter (at that level) will appear all in sequence as you keep pressing the button. Choose which one you need to enter, and you're on your way back on down the chain.

Likewise, when you are headed downward (deeper into the branches of the directory) and you want to turn back toward the root, with "FILE (whatever: you name it)" showing — you want to scroll through the remaining files until "BACKUP TO..." appears. It will come after the last numbered file, as well as before the first numbered file of the current subdirectory files you are viewing under LOAD: SYSTEM. If it isn't, you are probably looking at instrument, sequence or MIDI files, so press SYSTEM. If it still won't pull up, you must be in the root directory itself, viewing its files.

Now find your way back down the chain (RHYTHMS to ROLAND to ROCK) to "FILE 1 DRUM SOUNDS" and press ENTER. Now I'm going to get some shuteye while you go into COMMAND/SEQUENCE and create a few POWER DRUM tracks, like "BOOGALOO 1," "HARD ROCK 2" and "REGGAE 1." If you are following along with this exercise but don't have the Roland book and aren't familiar with one or more of these grooves, just create dummy sequences; name them as above and give all three 4/4 time signatures, but you needn't record anything — the named files will still save to disk.

Ok, I'm back from my beauty rest and I assume you're all done with your rhythm making, so let's save those files. Press LOAD and the display should show "BACKUP TO ROCK," and either arrow will bring up "THIS DIR = DRUM SOUNDS." Now press EDIT/SEQUENCE and scroll to the first sequence you want to save, say "BOOGALOO 1." Press COMMAND/SEQUENCE, scroll to "SAVE CURRENT SEQUENCE," and press ENTER. The display should say "NEWNAME = BOOGALOO 1." Press ENTER.

Verify that it's where it should be by pressing LOAD: "FILE 1 BOOGALOO 1" should appear. Now save the rest of your sequences. We know we're still in the same subdirectory because we didn't press any buttons (while we were in LOAD mode) either to backup from our subdirectory or to enter a different branch. You can verify this by pressing SYSTEM and then one of the side arrow buttons.

If you do have a copy of the Roland book and actually program every sequence in it for both drum sounds and Latin sounds, you don't want to have to create/name each sequence twice. To save a lot of extra button pushing, i.e. a lot of time, first create a group of sequences (name each and give it the appropriate signature) and then record tracks for each of the sequences, using drumsounds (e.g. POWER DRUMS) first. After saving them to the DRUMSOUNDS directory, press COMMAND / TRACK, scroll to "ERASE/UNDEFINE TRACK" and do just that: erase

all of the tracks from your sequence in memory, and then re-record them, using your LATIN PERCUSSION ensemble sounds, or if you have them, separate instruments (congas, timbales, bongos, etc.) loaded into different INSTRUMENT/TRACK locations, respectively. Then save these new sequences (same names — different track and note data) to the LATIN SOUNDS directory. The display won't ask you "DELETE OLD VERSION?" for each one, because they all are being saved to a different part of the disk hardware than were the DRUM-SOUNDS sequences with the same names, due to the workings of the directory (the software). So, yes, you can have more than one sequence (or any other type of file) with the same name, as long as they are stored in different subdirectories.

Since a lot of you who are reading this article will be utilizing floppy disk storage for your directory and other files, there is one further area I'll cover, and that addresses the question of instrument/track numbers for your sequences (given the fact that many of you won't be able to fit all of the percussion sounds you need for your beatbooks on one floppy, especially if some of the books get into a lot of ethnic percussion). There's a simple trick that allows you to store track info — it won't load instruments for you like a bank would, obviously — it does allow you to know what to load and to what instrument/track, so you can retrieve and load other drum kits, percussion ensembles and individual sounds from your other floppies. The advantage here is that all of the pertinent information is in one place, the directory.

To illustrate, we might create a third subdirectory of the root directory and call it "FILE 3 TRACK INFO." Then go into TRACK INFO directory and create subdirectories of it, namely items such as "T1 POWER DRUMS," "T2 LATIN PERCUSSION," "T3 SLT-8 KITS," "T4 CONGAS," "T5 TIMBALES," and so on. These are dummy directories, meaning they are, and will remain, empty, containing no files, having been solely created to serve as directional pointers, you might say.

However, if you are using specialized kits and instruments or even one special sound for a certain beat book, even for one sequence in that beat book, this approach won't work very well. For example, *The Art of Digital Drumming* uses some very specialized percussion samples for its section on African grooves. We would then want to put that track info in the same subdirectory as we find the associated sequences. So within the AFRICAN subdirectory (which we would have created as a subdirectory of DIGITAL), we create a subdirectory named "FILE 1 T6 AFRO-KIT" then create the various sequences ("JU-JU," "SOUKOUS," and so on) and save them also to the AFRICAN subdirectory. When we later come back to that directory, we'd know that we needed to find the floppy disk on which AFROKIT 1 is stored, and then load it into INSTRUMENT/ TRACK 6 in order to play back those Afrogrooves.

Ok folks, it's time for me to eat my dinner. The only problem is, I haven't located the part of my directory that details tonight's menu. Guess I'll have to pull up the dummy waiter file. So long for now. ■

Along the Event Horizon

Exploring the VFX-sd and SD-1 Event Editor — Part II

Robby Berman

Last month, we went over the basic operation of the VFX-sd/SD-1 event editor, a powerful beastie if ever there was one. This month, we're a-gonna talk applications.

I should mention that the SQs, EPSs, KS-32 and the ASR-10 all sport event editors like the one in the sd/SDs. The screens and procedures will differ slightly. Consult your manuals for details.

Clams On the Half Note

The most obvious use of the event editor is to get rid of notes you didn't intend to play. Suppose you play back a track you've just recorded and find that, in addition to your stellar performance, it also contains some dissonances you hadn't planned (or consonances — who am I to judge?). Make note, in bar and beat terms, roughly where in your sequence the accidental ugliness (or prettiness) occurs. Get into the event editor and set the EVENT TYPE to KEY (for key events). Next, select the TIME field in the upper middle of the first screen, and dial in a location just before where your mishap happened. Now, after underlining the EVENT NUMBER field, scroll slowly upward until you hear the wrong note. When you've got it, press the button above EDIT and then the one above DELETE. Press EXIT and audition your tidied-up performance. If there's more than one clam, repeat this procedure until you're satisfied.

Inserting Patch Selects

While Patch Selects are a great feature, accessing them in real time as you're whipping along on the keyboard requires some new motor skills you may not yet have fully developed to your satisfaction. The event editor allows you to insert those little gray button presses at your leisure after you've played your part.

With the event editor EVENT TYPE set to KEY, use the event number field to scroll up to any note for which you'd like a patch select invoked. Back up in the TIME field by one clock, change the EVENT TYPE to PSL, press EDIT and INSERT and change the three-digit value to the appropriate setting. Here are the numerical values for the various Patch Select states:

Left Patch Select=064

Right Patch Select=032

Both Patch Select buttons held down=127

No Patch Select buttons held down=000

When you exit to the audition page you'll hear the difference in sound that your PSL event has made. Note that a Patch Select setting will stay locked in, just as if you were still holding the button(s) down until you insert a new Patch Select event or get to the top of a new (or the same) sequence, where the default (000) is automatically re-invoked. Repeat as desired.

Sustain Pedal Hangovers

Sometimes you may find notes sustaining way beyond where you wanted them to end. Maybe you're punching in on a track or maybe you've been deleting measures from a sequence. No matter. What's happened is that you used the sustain pedal somewhere when you recorded your track and by punching in or editing you've inadvertently chopped off the part where you let go. The sequencer thinks the pedal is still pressed (and is letting those notes play and play and play.)

To remedy this, decide first of all where you want the sustained notes to stop. Then locate, in bars and beats, the first note(s) after the part you want sustained. Call up the event editor, set EVENT TYPE to KEY, and use the TIME field to pinpoint said note(s). Now, still in the TIME field, back up by one clock. Change EVENT TYPE to SUS, press EDIT and INSERT. You'll see that a sustain event has been inserted; set its value to 000 (this tells the sequencer that the pedal should not be depressed at that point.) Press EXIT twice and your hangover should be cleared up.

Legato That Note

Sometimes, when playing a legato line, notes may overlap by a few clocks. There are a few cases where this can be a problem.

When you're attempting to simulate a real-world instrument, even slight overlaps can reduce the realism. For instance, some instruments like trumpets, flutes and saxophones can't play more than one note at a time, so neither should your recreations of them. Also, when you're playing a melody line meant to sound like it's being played on a single string of something like a guitar or violin, and playing legato is often the way to make such imitations sound most realistic, remember that in real life you can't play two notes on the same string at once. So ya don't wanna do it now.

A third circumstance where overlaps are a very noticeable problem is when you're using a sound with its GLIDE parameter set to LEGATO on the pitch mod page (like PERKY MOOG from bank 5 of the factory ROMS in the SD-1.) Such a sound is helpfully programmed to glide from one note to another when there's an overlap (see pages 8-17 and 18 in the sd/SD Musician's Manual.) However, when I want my bass notes to bump right into one another and yet still retain their attacks, I find it's difficult to play them without overlapping them slightly and getting a bunch of inadvertent glides.

The event editor can remedy all of the above undesirable overlaps. With the EVENT TYPE set to KEY, go through your track one note at a time in any sections you want legato. For every note, scroll to the note that follows it and see where that second

note starts. Now back up to the note you want to edit, press EDIT and DURATION and set it to end one clock before the following note will begin. For example, if you want note #1 to go all the way up to note #2 (but not overlap it), and you saw that note #2 starts at bar 1, beat 2, clock 1, set note #1 to end at bar 1, beat 1, clock 96, the last clock before the new beat. It's a tedious process working through long sections (or whole tracks), but I think you'll find the results rewarding enough to be worth the effort. Once you get into a working rhythm, it goes pretty quickly.

If you're an ear player like me, there are bound to be occasions where you've let your fingers do the walking and you find that you don't really know exactly what you played. This happens most often to me when I come back to something I've sequenced weeks or months (okay, years) ago. Just set your event editor to EVENT TYPE=KEY and scroll through your recorded part. All the notes you played will be conveniently listed on the screen for your reading pleasure.

Move That Beat Around

Since you may want to insert new notes or move some old ones around, it might be helpful to know where to put them in your quantized track. The sd/SD sequencers have a resolution of 96 ppqn, which means that they recognize 96 tiny steps in between every two quarter notes in order to catch the shades between the beats. Therefore, in 4/4 time, eighth notes should be inserted at clocks 1 and 49. Sixteenth notes should fall at clock 1, clock 25,

clock 49 and clock 73. But you don't really need me anymore to tell you this stuff. To find the locations of other types of notes, spend a little research time. Create a new sequence for study purposes, record some of the type of notes you're thinking of inserting, quantize them and listen to a playback to make sure you played them correctly. Use your event editor to see where they landed (set the EVENT TYPE to either KEY or ALL.) Now go back to the music you were working on and insert away.

Velocity Rounding

By the way, just so you don't think you or your sd/SD are crazy (at least for this reason): If you've been changing velocity values of notes and later examine them after keeping your new track, you'll find that the sequencer has deliberately rounded off all of the velocities to the nearest multiple of four when it saved them. You're not crazy and it's not a bug.

I hope these tips give you an idea of how the event editor can make your world a sunnier place. Please don't hesitate to get up close and personal with this very helpful utility of the sd/SD series. Once you get comfortable with it, you'll probably find all kinds of situations where you can insert, delete and edit events to work your sequences to perfection. ■

Bio: Robby Berman is a musician staggering to the beat of a different drum machine in southern Illinois. His latest album is "Rings and Rings."

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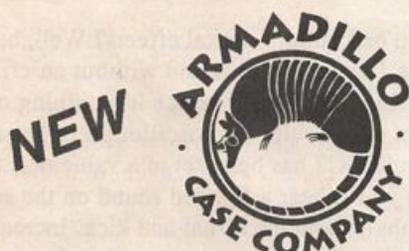
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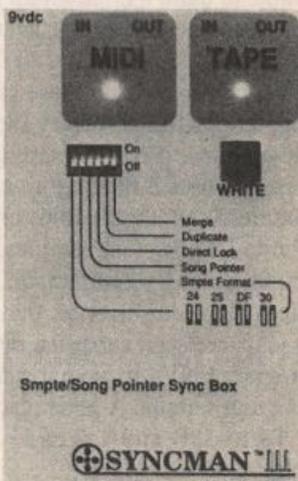
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SQ-80 Drum Programming

Brian Rost

Most people think of the SQ-80 as some sort of hot-rodded ESQ-1 — souped-up with a pressure sensitive keyboard, a disk drive and some extra waveforms. Probably the single most overlooked and under appreciated feature is a subset of those extra waveforms, namely the drum waves. Ensoniq had the bad luck to come out with the first synthesizer to offer sampled drum sounds right at the same time that Roland came up with the same idea in the MT-32 module (which not only had on-board drum sounds but a digital reverb as well). Of course, the MT-32 got all the attention and upped the ante so that nowadays it's considered a faux pas not to have a slew of sampled drum sounds in a synthesizer.

Despite the low public profile of the SQ-80 drum sounds, they are quite useful either as a replacement for a drum machine or as an adjunct. After all, there is one advantage to having the drum sounds built into a synth — they can be reprogrammed! As we'll see, you can get quite a bit of mileage out the drum waves thanks to the flexibility of the SQ-80 programming capabilities.

First, look at how the drum waves are set up in the SQ-80. There are five basic waves: log drum, kick drum, snare drum, toms and closed hi-hat. In addition there are five multi-sampled waves which take the five individual waves and split them across the keyboard. These multisampled waves make it possible to build a drum kit up as a single patch, but the single waves also have their uses, as we will see.

Let's go listen to what these samples sound like. Program up the patch DRMBAS using the DRUM2 wave. The filter is wide open and ENV4 is acting as a gate, so what we hear is the raw samples. Playing up and down the keyboard reveals an interesting fact: the toms are noisy! There is some grunge at the tail of the tom samples, and the end of the sample is quite audible. By comparison, the kick, snare and hi-hat are pretty clean (don't forget that this is an eight bit machine). Okay, it sure seems that the raw samples need some work, so reprogram ENV4 to have it start closing down toward the tail of the tom sample. A good place to start is set T2 to 20, T3 to 27, T4 to 18R and TK to 11. That gets rid of a lot of the grunge.

Now let's go see what we can do with the filter. Try setting the cutoff frequency to 32. Gee, that really darkens the sound though. To spruce it up a bit, raise the resonance to 7. Remember that a resonant filter will actually boost the signal right before the cutoff frequency, so by adjusting the frequency and resonance, we can adjust the treble to help the drum sound to cut through the mix better. Adding KBD as a

modulator lets you have the filter open up a bit more for the toms and less for the kick.

Okay, now we have a decent basic drum sound, but we've only scratched the surface of the programming potential of the SQ-80. We are only using one oscillator and have set the pan up so that our kit is in mono. Let's look at some of the ways we can customize the basic kit.

Ever wish the SQ-80 had built in digital effects? Well, here's a cute cheat to get a flanged drum sound without an effects unit. Program up DRMPHZ. You'll notice it's nothing more than our basic drum sound with two oscillators rather than one. The fine tune on OSC2 has been set to a value of 2. Try playing this kit and you'll hear a flanged sound on the snare and toms. It's less obvious on the hi-hat and kick. Increasing the detune value will make the sound more like chorus and less like flange. Synthesists have long used detuning to create fatter sounds, as this creates a natural chorusing effect; this is just another application of this idea.

Another neat trick is lowering the tuning of the drums to get a deeper, heavier tone. It's not quite as straightforward as you might think though, due to an oddity in the way the SQ-80 handles detuning. Program up DRMFAT and play it across the keyboard. You'll notice that the entire kit does sound deeper. Now look at the parameters of OSC1 and OSC2. The settings of OSC2 are just those of our basic kit, while OSC1 is modulated by ENV1, which has a negative pulse shaped envelope. Okay, why not just use the octave, semi and fine settings to drop the pitch? Good question, so let's try it. Set the octave of OSC1 to -1, SEMI to 31 and turn OSC2 off. You'll notice that the samples have all moved down one note, but have retained their original pitches! The split between the hi-hat and snare samples is now Bb to B rather than B to C. All we have done is shifted the samples and the split points across the keyboard. On the other hand, by using ENV1 as a modulator, we can shift the pitch downward without shifting the split points (which is what we really want to do). For some reason, the SQ-80 detunes by merely shifting the split points between samples, while using modulators keeps the splits intact while shifting the pitch. By mixing the two oscillators together, we can get the effect of deepening the normal drum sound. Of course, with another oscillator free, we could make a flanged variation of DRMFAT as well.

So far we have had a mono sound, but since the SQ-80 has stereo outputs it would be nice to take advantage of them. No problem, program up DMSTR1 and DMSTR2. These are variants of our basic drum sound again, but notice the pan and

SQ-80 PROG: DRMBAS

BY: Brian Rost

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 2	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 3	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	*OFF*	+0	*OFF*	+0
DCA 2	0	OFF	*OFF*	+0	*OFF*	+0
DCA 3	0	OFF	*OFF*	+0	*OFF*	+0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	127	0	0	*OFF*	+0	*OFF*	+0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	*OFF*	+0

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	0	ON	OFF	TRI	0	0	0	*OFF*
LFO 2	0	ON	OFF	SAW	0	0	0	*OFF*
LFO 3	0	ON	OFF	SAW	0	0	0	*OFF*

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+0	+0	+0	0L	0	0	0	0	0	0
ENV 2	+0	+0	+0	0L	0	0	0	0	0	0
ENV 3	+0	+0	+0	0L	0	0	0	0	0	0
ENV 4	+63	+63	+20	0L	0	0	0	0	0	0

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	0	ON	ON	ON	ON

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

SQ-80 PROG: DRMPHZ

BY: Brian Rost

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 2	+0	0	2	DRUM2	*OFF*	+0	*OFF*	+0
OSC 3	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	*OFF*	+0	*OFF*	+0
DCA 2	63	ON	*OFF*	+0	*OFF*	+0
DCA 3	0	OFF	*OFF*	+0	*OFF*	+0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	32	7	32	ENV4	+32	*OFF*	+0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	*OFF*	+0

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	0	ON	OFF	TRI	0	0	0	*OFF*
LFO 2	0	ON	OFF	SAW	0	0	0	*OFF*
LFO 3	0	ON	OFF	SAW	0	0	0	*OFF*

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+0	+0	+0	0L	0	0	0	0	0	0
ENV 2	+0	+0	+0	0L	0	0	0	0	0	0
ENV 3	+0	+0	+0	0L	0	0	0	0	0	0
ENV 4	+63	+63	+20	0L	0	0	20	27	18R	11

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	0	ON	ON	ON	ON

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

SQ-80 PROG: DRMFAT

BY: Brian Rost

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	0	0	DRUM2	ENV1	+22	*OFF*	+0
OSC 2	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 3	+0	0	3	DRUM2	*OFF*	+0	*OFF*	+0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	48	ON	*OFF*	+0	*OFF*	+0
DCA 2	63	ON	*OFF*	+0	*OFF*	+0
DCA 3	0	OFF	*OFF*	+0	*OFF*	+0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	32	7	32	ENV4	+32	*OFF*	+0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	*OFF*	+0

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	0	ON	OFF	TRI	0	0	0	*OFF*
LFO 2	0	ON	OFF	SAW	0	0	0	*OFF*
LFO 3	0	ON	OFF	SAW	0	0	0	*OFF*

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-63	-63	-63	0L	0	0	20	27	18R	0
ENV 2	-0	-0	-0	0L	0	0	0	0	0	0
ENV 3	-0	-0	-0	0L	0	0	0	0	0	0
ENV 4	+63	+63	+20	0L	0	0	20	27	18R	11

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	0	ON	ON	ON	ON

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

SQ-80 PROG: DMSTR1

BY: Brian Rost

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 2	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 3	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	*OFF*	+0	*OFF*	+0
DCA 2	0	OFF	*OFF*	+0	*OFF*	+0
DCA 3	0	OFF	*OFF*	+0	*OFF*	+0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	32	7	32	ENV4	+32	*OFF*	+0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	KBD	+63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	0	ON	OFF	TRI	0	0	0	*OFF*
LFO 2	0	ON	OFF	SAW	0	0	0	*OFF*
LFO 3	0	ON	OFF	SAW	0	0	0	*OFF*

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-0	-0	-0	0L	0	0	0	0	0	0
ENV 2	-0	-0	-0	0L	0	0	0	0	0	0
ENV 3	-0	-0	-0	0L	0	0	0	0	0	0
ENV 4	+63	+63	+20	0L	0	0	20	27	18R	11

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	0	ON	ON	ON	ON

	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
	OFF	-	OFF	-	OFF	-	DMSTR 2 A 2

SQ-80 PROG: DMSTR2

BY: Brian Rost

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 2	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0
OSC 3	+0	0	0	DRUM2	*OFF*	+0	*OFF*	+0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	*OFF*	+0	*OFF*	+0
DCA 2	0	OFF	*OFF*	+0	*OFF*	+0
DCA 3	0	OFF	*OFF*	+0	*OFF*	+0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	32	7	32	ENV4	+32	*OFF*	+0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	4	KBD	+63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	0	ON	OFF	TRI	0	0	0	*OFF*
LFO 2	0	ON	OFF	SAW	0	0	0	*OFF*
LFO 3	0	ON	OFF	SAW	0	0	0	*OFF*

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-0	-0	-0	0L	0	0	0	0	0	0
ENV 2	-0	-0	-0	0L	0	0	0	0	0	0
ENV 3	-0	-0	-0	0L	0	0	0	0	0	0
ENV 4	+63	+63	+20	0L	0	0	20	27	18R	11

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	0	ON	ON	ON	ON

	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
	OFF	-	OFF	-	OFF	DMSTR1	A 2

split parameters carefully. In both patches, the keyboard is used as a pan modulator. The split point between the two is set at A2 so that DMSTR1 has only the kick, hi-hat and snare while DMSTR2 has the toms only. Listen to this patch carefully through headphones to get the full effect. The kick drum appears center stage, and since the hi-hat and snare are played on higher keys, they appear further to the right. The toms are then set to run right to left in descending pitch, more or less centered in the field. By adjusting the depth of the pan modulation of the patches you can widen or narrow the stereo effect. Because the two patches are split, it takes no more voices to create the stereo kit than a mono kit.

Until now we have used DRUM2 as the only wave in the patch, but obviously other waves could be used. A good example is the factory patch DRUMZ. This patch uses DRUM1 on two oscillators (both are dropped in pitch, so there is no kick or hi-hat in this patch; there is also detuning between OSC1 and OSC3 to animate the sound). The wave used on OSC2 is STEAM, which is essentially pitched noise. In the days of analog synths, most drum patches used noise as a component to add some of that snap during the attack of the sound. Some other waves to try instead of STEAM for drum patches are THUMP (good for bass drums), CHIFF, BREATH, and the the three NOISE waves.

So when does it make sense to use the single drum waves versus the multisampled waves? If we take another look at

DRUMZ, we can see that the addition of the STEAM wave plus the octave shifts make it impossible to use the hi-hat wave contained within the DRUM1 wave. If we still wanted to have a hi-hat available, we have a couple of options: one is to split DRUMZ with a patch that has only a hi-hat sound in it, another is to take advantage of the SQ-80 sequencer and set up separate tracks for DRUMZ and a patch that does have a hi-hat in it. The former approach is good if you can find a convenient point for the split and you can get all the sounds you need with only two drum patches. The latter approach gives more flexibility, since you can have up to sixteen individual sounds (a two-way split patch on each of eight tracks).

In general, it makes sense to use the multisampled waves when you are either looking for a straight drum sound or want all the parts of the kit to be processed similarly. Using the single drum waves is best when you want each part of the kit to be processed a bit differently. For example, you might want to have flanging on the snare but not on the other drums.

Another programming trick that is useful is pitch bending under envelope control. All drums go somewhat sharp when struck, but there are certain types of drums where pitch bend is an integral part of their sound. Two good examples are tympani (where pitch bending is controlled by a pedal mechanism) and tablas (Indian hand drums where the pitch is bent by palm pressure on the drum head). When synthesizing up these types of drum sounds, using an envelope to create the pitch bend will add to the realism.

To wrap it up, the drum waves in the SQ-80 are indeed capable of creating a wide range of drum sounds. For some reason, neither the factory patch sets or those from third party sources have done more than scratch the surface of the potential. Hopefully some of you SQ-80 owners out there will change that situation! ■

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.

BACK ISSUES

Back issues are \$2.00 each. (Overseas: \$3 each.) Issues 1-30, 35-38, 67-72, and 82-84 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.

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Multi Tap Envelope 1 Modulations

Dara Jones

The VFX is a powerful machine loaded with many, many features that I'm going to explore over the next few issues. In preparing this article, I found a wealth of modulators — LFO, envelopes, timbre control, pressure, etc — that are right under the fingertips just waiting to be incorporated into patches and yet can be lost within the complexity of the programming options.

To start, either use the basic patch default in the Oview VFX editor as I did or select an internal patch you don't mind writing over, press the select voice button, and select the first voice — making sure there are parentheses around all but this voice — and then press the copy button and select "default." The VFX will then initialize all parameter settings for that voice.

Envelope 1 will be used as a modulator for the various targets within this patch. I want to use it as something of a multitap delay such as found on the Quadraverb. So, using my trusty Oview to give me decay times in milliseconds I calibrated the times to be approximate multiples of one another so to best simulate quarter, eighth notes, etc at 127 beats per minute. If you don't have Oview, you can use these settings:

ENV1:

Page 1

LEVELS INITIAL=00 PEAK=99
BREAK1=00 BREAK2=99 SUSTAIN=00

Page 2

TIMES ATTACK=32 DECAF1=22
DECAF2=42 DECAF3=52 RELEASE=62

Page 3

KEYBOARD-TRACK=+00 VEL-CURVE=CONVEX
MODE=REPEAT VEL-LEVEL=00 VEL-ATCK=00

By using repeat this makes Envelope 1 act as a variable LFO without being random as all the attack and decay times are set to actual note times at 127 bpm. I set the levels alternately at either 00 or 99 to have the most contrast for our investigating purposes.

First, call Envelope 1 into the panning by pressing output twice and setting the PAN at 00, MODSRC=ENV 1 and setting the MODAMOUNT to +99. It's not your regular Leslie, but still a cool effect. Now, change the MODAMOUNT back to 00 and press the Wave button. Change the wave to RES-

ONANT 2, put ENV 1 in as the MODSOURCE with a modulation amount of +99. Now who said this old baby didn't have resonance? It just takes a little bit more doing to find it, that's all. But we'll look at that another time in more depth. Now, change the start of the wave to 99 and the modulation to -99 to modulate the wave a little differently. Reset the MODAMOUNT and the wave start to 00, and press the Pitch button. Set Env 1 to +15 and your patch is starting to sound a little drunk. Set to +99 to increase the pitch modulation. Negative values will modulate the pitch going down instead of up. Reset the MODAMOUNT to zero. Press the Filter button and set the MODSOURCE to Env 1 and the modulation amount to +99. You'll notice that this has no effect on the sound because the filter cutoff is set to 127. Try some lower settings for the cutoff point and notice the subtle changes in timbre.

Filter modulation, used with wave modulation, can make some great resonant sounds. Reset the MODAMOUNT to 00 and the cutoff to 127. Press the output button and set the MODSOURCE to ENV 1 and the amount to +99. Amp modulation is getting us an interesting type tremelo at this level. +30 seem to yield softer results. Reset the MODAMOUNT to 00 and press the LFO button. Set the rate to 43, its modsource to ENV 1 but set the modulation to -99 and the level to 14. Notice the effect here is to modulate or change how fast the LFO swings back and forth. Set the upper mod amount to 00 and set the lower MODSOURCE to ENV 1. Notice that this has the affect of varying the depth of the LFO's modulation. Imagine using ENV 1 to modulate the LFO in either or both of these ways and then using the modulated LFO to modulate some of the parameters we covered earlier. You KNOW you'll be having some fun with this little dinosaur when you start modulating the heck out of everything! That's what makes this machine so exciting to own.

I'm gonna leave you hanging by NOT applying this to the mixer at this point. That subject deserves to be covered by itself in another article at some point in the future.

Try using other modulators like the LFO, the modwheel, etc, to come up with your own effects. The sky is the limit with this powerful machine. No, it's not a JD-800, but it's still not dead yet! ■

Bio.: Dara works as a horticulturalist by day, analog-hog by night. She plans to do film editing in the next year or so.

Waveform Mutilation 101 for SQs & KSs

Part 10: Making Some Noise

Jack Stephen Tolin

Ever since the beginning of sound synthesis, people have wanted to make a lot of noise and think of it as using technology to actualize one's creative potential. If you have listened to much of our culture's dance music or any of today's rap, you have probably heard a lot of noise in the songs (or raps) producing some sort of rhythmic figure inspiring one to dance or move in relation to the music (or rap, in the case of rap). This refers to noise as those sounds that would, in their normal context, not be considered musical — "scratching" records, whistles, dogs barking, people grunting, talking and whatnot. Even John Tesh on "That Ole Demon Meanness" (off of *Tour De France*) uses a plunger plunging a toilet layered with a bouncing basketball in an auditorium for a bass drum.

The best example of this in a typical synthesizer is/are the noise waveform/s. The SQ/KS family have a wave in the INHARMONIC wave class called NOISE LOOP. This is not the only nontraditional (or unusual) wave to be found in the wave bank. Many can be found in the percussion class (for example, musician's tape, spray can, and the like), or even in the INHARMONIC loops (e.g. ANVIL, CLUSTER, and so on). But since most synthesizers — or at least most that I've heard — have the noise wave in some form, that is the most practical non-musical wave to deal with in this kind of forum. The SQ-80 actually has three (!) different waves that make up its collection of noise, aptly titled NOISE1, NOISE 2, and NOISE 3. Hearing them in different contexts will help us utilize something that is by its very nature non-musical in naturally musical frameworks.

And now, let's begin.

At this time we will be using ROM sounds on the SQ-1+, so make sure you are in Sound Mode and have the ROM bank selected. Press bank 2 and screen 3. This should select "Binary Keys." Then hit the Edit Sounds button, the Wave Bank button, and the Screen 0 button. Make sure the SelectVOICE line reads "ONE." Then move the cursor onto voice 1, which should read "ON." Press the ^/Yes button once. This should put voice 1 into SOLO mode. Hit the button for screen 1. The screen should read:

```
Wave=TUNED PERCS  
SYNTH PLUCK
```

After making sure the top line is selected, hit the ^/Yes button four times. The Wave (Class) should now be set to INHARMONIC. Select the bottom line and press the ^/Yes button four times. The Wave should now be set to NOISE LOOP.

One source, namely the *Musician's Manual* to the SQ-1+/2

published by Ensoniq, has this to say about the inharmonic noise loop on board the SQ/KS Series synths: "Inharmonic [noise] loops are similar to waveforms except that they contain many cycles of the sound and can therefore contain *inharmonics* — frequencies which are not exact multiples of the fundamental frequency." (Page 5-10.) Go to the Amp bank, screen 0, and set all of the parameters so that the screen reads like this:

```
Lev1=99 99 99 99  
Time=00 00 00 00
```

Hold down a key on the lower section of the keyboard. If you listen carefully then you can easily hear the loop going through its cycles and repeating.

Now, it's time to mutilate. Hit the Amp bank, screen 3, and Enter. Tap the ^/Yes button (obviously one of the most popular features of the SQ-1+) eight times. This should result in something which should appear on the screen as SHORT BLIP. If it doesn't, scroll through the choices until you find it. Press Enter. Now play around with the sound. Notice the nice attack we yield — it sounds as if it is all ready for the rest of the patch. If you hit screen 0, you will see the following:

```
Lev1=00 99 00 00  
Time=02 02 40 16
```

Hit screen 3 and press Enter again. This time, press the ^/Yes button six times. The new default should read AMP BLIP. Hit Enter again. Notice how this particular set of values sounds much longer than the previous. I myself was reminded of the musician's tape waveform. This particular set of values doesn't work quite as well in the area of attack-based types for sounds of this caliber. (You will notice the difference after you de-SOLO voice 1.) If you hit screen 0, you will see the following:

```
Lev1=70 99 00 00  
Time=02 00 00 58
```

Hit screen 3 and press Enter yet again. This time, press the ^/Yes button once. The new default should read TRANSIENT. Hit Enter like there's no tomorrow (after all, why wait?). Notice how this particular transient attack is faster and louder than the first. In other words, it is just as usable in attack-type situations as the first example. If you hit screen 0, you will see the following:

```
Lev1=99 99 00 00  
Time=02 00 00 58
```

WAVE	1	2	3
Select Voice	Solo	Solo	Solo
Wave Class	Inharm	Inharm	Inharm
Wave	NoiseLoop	NoiseLoop	NoiseLoop
Delay Time	000	000	000
Wave Direction	-	-	-
Start Index	-	-	-
MODSRC	-	-	-
MODAMT	-	-	-
Restrk Decay	00	00	00

LFO	1	2	3
LFO Speed	13	-	-
Noise Rate	13	-	-
Level	50	-	-
Delay	99	-	-
MODSRC	Off	-	-
Wave	Sine	-	-
Restart	On	-	-

FILTER	1	2	3
Filter 1	2Lo	2Lo	2Lo
Filter 2	2Hi	2Hi	2Hi
FC1 Cutoff	127	127	127
ENV 2	+00	+00	-99
FC1 KBD	+00	+00	+00
MODSRC	Off	Off	Off
MODAMT	-	-	-
FC2 Cutoff	000	000	000
ENV2	+00	+00	+99
FC2 KBD	+00	+00	+00
FC1MOD-FC2	Off	Off	On

PITCH	1	2	3
Octave	-2	-2	-4
Semitone	+00	+00	+00
Fine	+00	+00	+00
ENV1	+00	+00	+99
LFO	+00	+00	+00
MODSRC	Off	Off	Env1
MODAMT	-	-	+99
KBD Pch Track	On	On	On
Glide	Off	Off	Off
Glide Time	00	00	00

ENV1	1	2	3
Initial	-	-	50
Peak	-	-	99
Break	-	-	50
Sustain	-	-	00
Attack	-	-	50
Decay 1	-	-	50
Decay 2	-	-	50
Release	-	-	50
Vel-Level	-	-	00
Vel-Attack	-	-	00
Vel Curve	-	-	-
Mode	-	-	Normal
KBD Track	-	-	+00

ENV2	1	2	3
Initial	-	-	99
Peak	-	-	75
Break	-	-	50
Sustain	-	-	00
Attack	-	-	00
Decay 1	-	-	50
Decay 2	-	-	50
Release	-	-	00
Vel-Level	-	-	26
Vel-Attack	-	-	00
Vel Curve	-	-	Linear
Mode	-	-	Normal
KBD Track	-	-	+00

AMP	1	2	3
Initial	25	99	99
Peak	50	50	99
Break	74	00	99
Sustain	99	00	00
Attack	50	10	55
Decay 1	50	50	55
Decay 2	50	35	55
Release	70	50	55
Vel-Level	00	00	00
Vel-Attack	00	00	00
Vel Curve	-	-	-
Mode	Repeat	Normal	Normal
KBD Track	+00	+00	+00

OUTPUT	1	2	3
VOL	84	99	99
Boost	On	Off	Off
MODSRC	LFO	Off	Amp
MODAMT	-25	-	+99
KBD Scale	+00	+00	+00
Key Range	-	-	-
Output Bus	FX1	FX1	FX1
Priority	Med	Med	Med
Pan	+00	+00	+00
Vel window	000	000	000

CONCERT REVERB	
FX-1	50
FX-2	99
Decay Time	30
Diffusion	00
Detune Rate	99
Detune Depth	50
HF Damping	33
HF Bandwidth	99
LF Decay	+25
MOD (Dest)	FX1-Mix
BY (MODSRC)	Modwheel
MODAMT	+49

Now go back to the Wave bank, screen 0, and de-SOLO voice 1. Go back to the Amp bank, screen 3, and try the three examples listed above all over again. This time you can hear the differences in a larger context. At this point, you will realize why AMP BLIP doesn't work quite as well here as the others.

However, try going into Sound Mode and select "ROM 24 Clav." For voice 1, select NOISE LOOP with the AMP BLIP for the Amp values. For voice 2, select DRUM WAVE for the wave class, BRUSHED SNARE for the wave, and turn the Boost to ON in the Output bank, screen 0. Now hit middle C. Here we have an "appropriate" use for the AMP BLIPped NOISE LOOP. Alter it as you see fit.

As I've indicated, one novel use for the noise type waveforms is in different attacks for sounds. Of course, this is not the only use. However, as you experiment with the parameters of attack-type values in the Amp bank of noise, you will find that noise does tend to easily find a place for itself in this setting.

Another source, namely the *Musician's Manual* to the SQ-80, has this to say about the three noise waveforms: "NOISE 1... is a Waveform taken from filtered noise. It works best when tuned down low (OCT=-3). (Note that the Noise Waveforms here differ from analog noise generators, in that the Waveforms are by definition repeating patterns, and noise is random.) NOISE 2... is very close to white noise. It has almost no pitch,

but modulating the Oscillator playing this Waveform with a fast LFO or an Envelope, will eliminate what pitch tracking there is. NOISE 3... is good for putting random frequency components into a sound (the attack "ping" of a mallet instrument, for example). It has a clangorous, metallic quality, and its pitch tends to be unpredictable." (Page 34.)

At this time, load in the original ROM bank of sounds on the SQ-80. Now select the "MALLET" sound. Press OSC 1 and select the right-most soft button above the screen. Change the wave to NOISE 1. Do the same for OSC 2 and 3. Play around a while to get used to this sound. Notice how usable — to say the least — this new sound is. Next, go through OSC 1, 2 and 3 again changing each wave to NOISE 2, playing around with the sound, and then repeating the process with NOISE 3. Notice how NOISE 2 is more fuzzy and less pitch oriented. Notice the random metallic ping-like result from NOISE 3. You may want to go back and alter only one oscillator at a time to observe how NOISE1, 2 and 3 can be used as a part within the context of the overall sound.

When you are ready to move on, select "FLOON" (first sound on the second row of "INT 1"). Hit the OSC 3 button and select the wave. Change it from STEAM to NOISE 1, NOISE 2, and NOISE 3 — each time playing with the patch and getting used to it. Notice how 1 offers (basically) a different attack, 2 offers an extremely fuzzy addition to the sound, and 3 offers a

SQ-80/ESQ-1 PROG: X-WIND

BY: Jack Stephen Tolin

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-3	00	00	NOISE1	LFO2	+16	OFF	-
OSC 2	-3	00	05	NOISE1	LFO2	+16	OFF	-
OSC 3	-3	00	03	NOISE1	LFO2	+16	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	58	ON	LFO3	+27	OFF	-
DCA 2	51	ON	LFO3	+27	ENV3	+63
DCA 3	55	ON	LFO3	+27	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	045	31	00	LFO3	-23	PRESS	-23

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	08	LFO3	-32

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	-	-	-	-	-	-	-	-
LFO 2	01	OFF	ON	TRI	63	02	30	WHEEL
LFO 3	03	OFF	ON	TRI	63	00	63	WHEEL

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	+63	+63	+00	00L	00	00	63	63	55	47
ENV 4	+63	+63	+63	00L	00	27	00	63	39R	09

	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	-	-

quasi-random effect. With this in mind, you may want to browse through your current collection of banks and substitute a NOISE wave every now and then to try it out.

I have included a couple of patches which are, by their nature, "noisy." The first one — for the SQ/KS family — is called "Wave, Popcorn, +." When you listen to each voice, SOLO it (the patch is three sounds in one). The modwheel adds a concert reverb which nicely expands the atmosphere of each voice, especially voices 1 and 3. The second patch — for the ESQ-1/SQ-80 — is called "X-WIND." This patch borders on the ghostly with a high "Q" wind in addition to a rising and falling pitch. For ESQ-1 users, change Filter MOD #2; PRESS to PEDAL. If you don't have a control voltage pedal, you may want to try velocity. After hearing this patch with NOISE 1 waveforms, try 2 and 3.

That's all the noise I will make for this month. Keep those waveforms mutilated! ■

Bio: Jack Tolin is currently a Psychology major at Eastern Nazarene College in Quincy, Mass. and sometimes performs for the "Coffee House."



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USER GROUPS / CONTACTS

Would like to correspond with other EPS owners to trade sounds and work with the EPS. I can offer samples of Soviet analog synthesizers. Gints Stankevics, Bebru 2-2, Jekabpils, LV 5205, Latvia.

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"Anthony Ferrara, Contemporary Guitarist," audio cassette, reviewed in July '92 *Hacker*. Send \$5.50, check or m.o., payable to: Anthony Ferrara, P.O. Box 14503, Philadelphia, PA 19115. 24-Hour demo line: (215) 742-0738.

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Prog: NEW ROADZ

By: Dr. Brad, Kaufman Sounds

Notes: Here's a classic-sounding electric piano. Use the modwheel to detune Voices 1 and 2 for a chorusing effect. If too much distortion is present, turn Boost for all voices. Volume of Voice 3 (Tine) can be adjusted to taste. To add stereo tremolo go

to the output page of Voices 1 & 2 and adjust Modsrc to LFO and Modamt to +11. This gives tremolo at two different rates for Voices 1 & 2. (Use headphones.)

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	Waveform	String	Waveform
Wave	OrganV.2	Clavplano	DigPnTine
Delay Time	0	0	0
Wave Direction	Forward	Forward	Forward
Start Index	-	-	-
MODSCR	-	-	-
MODAMT	-	-	-
Restrk Decay	0	0	0

LFO	1	2	3
LFO Speed	25	31	-
Noise Rate	0	0	-
Level	99	99	-
Delay	0	0	-
MODSRC	Off	Off	-
Wave	Tri	Tri	-
Restart	On	On	-

AMP	1	2	3
Initial	99	99	99
Peak	0	50	99
Break	0	0	99
Sustain	0	0	99
Attack	85	85	0
Decay 1	0	0	0
Decay 2	0	0	0
Release	24	24	20
Vel-Level	19	19	26
Vel-Attack	0	0	0
Vel Curve	Linear	Linear	Convex
Mode	Normal	Normal	Normal
KBD Track	0	0	0

PITCH	1	2	3
Octave	0	0	-1
Semitone	0	0	0
Fine	0	+04	0
ENV1	0	0	0
LFO	0	0	0
MODSCR	Wheel	Wheel	-
MODAMT	+10	-10	0
KBD Pch Track	On	On	On
Glide	No	No	No
Glide Time	0	0	0

FILTER	1	2	3
Filter 1	2LP	2Lp	3Lp
Filter 2	2Lp	2LP	1HP
FC1 Cutoff	0	0	0
ENV 2	+99	+99	+99
FC1 KBD	0	0	0
MODSCR	-	-	-
MODAMT	0	0	0
FC2 Cutoff	0	0	0
ENV2	+99	+99	0
FC2 KBD	0	0	0
FC1MOD-FC2	Off	Off	Off

OUTPUT	1	2	3
VOL	99	99	74
Boost	On	On	On
MODSRC	-	-	-
MODAMT	0	0	0
KBD Scale	0	0	0
Key Range	-	-	-
Output Bus	FX2	FX2	FX2
Priority	Med	Med	Med
Pan	+98	-98	00
Vel window	00	00	00

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

ENV2	1	2	3
Initial	88	81	99
Peak	60	60	80
Break	0	0	65
Sustain	0	0	40
Attack	46	46	0
Decay 1	66	66	20
Decay 2	0	0	29
Release	00	24	20
Vel-Level	46	46	59
Vel-Attack	0	0	0
Vel Curve	Linear	Linear	Convex
Mode	Normal	Normal	Normal
KBD Track	-56	0	-42

EFFECTS — CHORUS AND REVERB			
FX-1	25	MOD (Dest)	FX2
FX-2	22	BY (MODSRC)	Modped
Decay time	50	MODAMT	50
HF Damping	0		
Chorus Rate	17		
Chorus Depth	20		
Chorus Center	50		
Feedback	00		
Chorus Level	53		

The Hack: Okay, okay, we've done a lot of piano patches lately. But this is one of those great Dr. Brad VFX-to-SQ patches. And here we (finally) find a Rhodes that closely emulates the Rhodes of the Ages rather than a DX piano (complete with a very good hammer-to-tine strike). I've already made some changes in numbers and nomenclature in the original patch, so the translation to SQ-speak may be a little easier. This patch does, in fact, distort so turn Boost to Off for all three voices. I've chosen to use both FX1 and FX2, though this is not necessary. You may find the tine-strike sound from Voice 3 is a bit too bell-like. Change the Octave setting in that voice's pitch section to 0. Go to Voice 3's Output Section and set Vol to 60. Dr. Brad had completed his notes with suggestions for using different waves to create different "pianos" — but some of the transwaves don't exist on the SQ. But try this: Voice 1— try any transwave, with different start points, or Organ Var.3. Voice 2 —

Pickbass or Pluckbass. Voice 3 — Transwaves, different start points, Synthbell, Chiff flute or Vocalbell. Note to beginning programmers: This Rhodes patch works well because of some not-so-obvious programming strategy. He does not use the Filter cutoffs. Rather, the punchy sound is obtained through the use of Env2 levels in the Filter Section. Dr. Brad uses fairly simple, straight-forward envelopes. And complex modulation sources and destinations are not used or needed.



Jeffrey Rhoads

Bio: Jeffrey Rhoads has been a keyboardist/composer on the Philadelphia Jazz and R + B scene for a period of time resembling forever.

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."

SD & VFX Prog: INST-OCT

By: James Samp, Fond du Lac, Wis.

NOTES: I programmed this patch to satisfy my peculiar desire to jump an octave while keeping my finger on the same key. Unlike most programs which bend the pitch up, applying pressure to any key will instantly raise the pitch one octave, hence the title "Instant Octave." Polykey pressure enables you to play six-note arpeggios with a simple triad, though it takes a while to learn to do this smoothly. 0* gives a somewhat caustic lead sound with a truly unique aftertouch. 0* is a common Minimoog sound, but pressure stair-steps the note downward one octave; this could be used to simulate fast woodwind lines. With very slow pressure modulation, ** will bring you bagpipes from space. I love the polykey chords on this one!

WAVES	1	2	3	4	5	6
Wave	Bubbawv	Square	Sawtooth	Sawtooth	DigitalX	Sawtooth
Wave Class	Waveform	Waveform	Waveform	Waveform	Transwave	Waveform
Delay	0	0	0	0	0	0
Start	-	-	-	-	0	-
ModSrc	-	-	-	-	Mixer	-
ModAmt	-	-	-	-	+99	-

MOD MIXER	1	2	3	4	5	6
SRC-1	*Off*	*Off*	*Off*	-	*Off*	-
SRC-2	Press	Press	Press	-	Press	-
SRC-2 Scale	1.0	1.0	1.0	-	1.0	-
SRC-2 Shape	Quant2	Quant8	Quant2	-	Quant8	-

PITCH	1	2	3	4	5	6
Octave	-1	0	-1	-1	-1	0
Semitone	0	0	0	0	0	0
Fine	+10	+10	+10	+10	+10	0
Pitch Table	System	System	System	System	System	System

PITCH MODS	1	2	3	4	5	6
MODSRC	Mixer	Mixer	Mixer	*Off*	Mixer	*Off*
MODAMT	+74	-64	+74	0	+64	0
Glide	None	None	None	None	None	None
ENV1	0	0	0	0	0	0
LFO1	0	0	0	0	0	0

FILTER 1	1	2	3	4	5	6
Mode	3LP	3LP	3LP	2LP	3LP	2LP
Cutoff	80	80	80	0	80	0
KBD	0	0	0	0	0	0
MODSRC	*Off*	*Off*	*Off*	Press	*Off*	Press
MODAMT	0	0	0	+51	0	+51
ENV2	0	0	0	+99	0	+99

FILTER 2	1	2	3	4	5	6
Mode	1HP	1HP	1HP	2LP	1HP	2LP
Cutoff	64	64	64	127	64	127
KBD	0	0	0	0	0	0
MODSRC	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*
MODAMT	0	0	0	0	0	0
ENV2	0	0	0	0	0	0

OUTPUT	1	2	3	4	5	6
VOL	99	99	99	74	99	74
MODSRC	*Off*	*Off*	*Off*	*Off*	*Off*	*Off*
MODAMT	0	0	0	0	0	0
KBD Scale	0	0	0	0	0	0
LO/Hi Key	A0/A0	A0/A0	A0/A0	A0/A0	A0/A0	A0/A0
Dest Bus	FX1	FX1	FX1	FX2	FX1	FX2
Pan	50	50	50	50	50	50
MODSRC	LFO	LFO	LFO	LFO	LFO	LFO
MODAMT	+99	-99	+99	+99	+99	+99
Pre-Gain	Off	Off	Off	Off	Off	Off
Voice Prior	Medium	Medium	Medium	Medium	Medium	Medium
Vel Thresh	0	0	0	0	0	0

LFO	1	2	3	4	5	6
Rate	28	18	18	18	18	18
MODSRC	*Off*	*Off*	*Off*	Press	*Off*	Press
MODAMT	0	0	0	+24	0	+24
Level	99	99	99	99	99	99
MODSRC	*Off*	*Off*	*Off*	Wheel	*Off*	Wheel
Delay	0	0	0	0	0	0
Waveshape	Triangle	Triangle	Triangle	Triangle	Triangle	Triangle
Restart	Off	Off	Off	Off	Off	Off
Noise SRC RT	-	-	-	-	-	-

THE HACK: It's nice to see some unique uses of controllers, for a change. James has done some clever programming here. The patch was a bit too swimmy for me overall, so I first tried turning the reverb DECAy time down. What worked much better, though, was to turn the FX1 MIX to 20; the reverb is still long, but much less obtrusive. Another useful tweak would be to adjust the tuning of the overall patch; all voices except Voice 6 are tuned 10 notches sharp. Detuning voices in opposite directions (i.e. +07 and -07, for instance) fattens the patch up while keeping it centered on A440. Finally, the ** patch is interesting, but when I muted Voice 5 and layered the patch with another keyboard, I really had some fun. The brass swell was great, but the stereo aftertouch effect knocked my socks off! - Sam Mims

SELECT VOICE

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

ENV1

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

ENV2

	1	2	3	4	5	6
Initial	-	-	-	0	-	0
Peak	-	-	-	99	-	99
Break 1	-	-	-	85	-	85
Break 2	-	-	-	64	-	64
Sustain	-	-	-	27	-	27
Attack	-	-	-	39	-	39
Decay 1	-	-	-	24	-	24
Decay 2	-	-	-	29	-	29
Decay 3	-	-	-	57	-	57
Release	-	-	-	48*	-	48*
KBD Track	-	-	-	0	-	0
Vel Curve	-	-	-	Cnvx2	-	Cnvx2
Mode	-	-	-	Norm	-	Norm
Vel-Level	-	-	-	48	-	48
Vel-Attack	-	-	-	0	-	0

ENV3

	1	2	3	4	5	6
Initial	99	99	99	0	99	0
Peak	99	99	99	99	99	99
Break 1	99	99	99	99	99	99
Break 2	99	99	99	99	99	99
Sustain	99	99	99	99	99	99
Attack	0	0	0	14	0	14
Decay 1	0	0	0	0	0	0
Decay 2	0	0	0	0	0	0
Decay 3	0	0	0	0	0	0
Release	32*	32*	32*	53*	32*	53*
KBD Track	0	0	0	0	0	0
Vel Curve	Cnvx2	Cnvx2	Cnvx2	Cnvx2	Cnvx2	Cnvx2
Mode	Norm	Norm	Norm	Norm	Norm	Norm
Vel-Level	0	0	0	0	0	0
Vel-Attack	0	0	0	0	0	0

PGM CONTROL

Pitch Table	Off
Bend Range	**
Delay	x4
Restrike	37
Glide Time	0

EFFECTS (1)

Effect	Concert Reverb
Decay	55
FX1 Mix	50
FX2 Mix	25

EFFECTS (2)

Pred-Delay	50
Early Refl Level	10
Early Refl Time	30
Diffusion	58

EFFECTS (3)

FX2 Mode	Norm Stereo Send
HF Damping	40
LF Decay	0

PERFORMANCE

Timbre	0
Release	0
Pressure	Key

The Interface

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

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

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

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

Dear Transonions,

I am the proud owner of an Atari 1040 STe (exaggerated to 4 meg). I use the classic EPS. Is there any software made for my EPS - sequencing, sound editing, whatever? I'm looking for shareware, PD, commercial, etc. Could you let me know of any sources?

Much thanks,
Al Trautman
Lydia, LA

[CS - Any sequencing programs for the Atari should work just fine with your EPS. You might want to check reviews in back issues of Keyboard and Electronic Musician magazines to get a sense of what's out there and what might be best for you. You might be interested to know that Ensoniq is the authorized US distributor for one of the most highly respected sequencing programs for the Atari, Notator, from EMAGIC (formerly from C-lab). I'm sure they'd be more than happy to tell you about it.]

As far as sound editing, the only thing I'm aware of for editing EPS samples in the Atari environment is a program called Universal Sound Designer from Digidesign, and I'm not sure that it's still available. Perhaps Ensoniq (or someone else) might have some suggestions.]

[Ensoniq - We can't list every piece of Atari software available in this column, but we are distributing EMAGIC software, which includes Creator SL (sequencing) and Notator SL (sequencing and notation).]

For sample editing on the Atari we would recommend you contact Interval Music at (310) 478-3956 about their GenWave program, which offers high quality sample editing and supports many different samplers.]

[TH - Also check out the Atari-specific magazines. And THE best for PD Atari software is the GEnie BBS. Call them at 1-800-638-9636 for more info.]

Dear Hacksters,

HELP! I have owned an EPS classic for nearly three years. Soon after the purchase I

added the Maartists 4x expander, realizing I would have to stick with Maartists when I was ready to add the SCSI interface. Well, now I'm ready and now I appear to be out of luck. I have just learned that Maartists no longer sells the SCSI adapter for the original EPS. I know what you're thinking - "Why the hell did you wait this long to add a SCSI drive?" I guess I just loved to hear that ol' floppy drive buzz and whirr non-stop. Anyway, what's important is that I need to dig up a Maartists SCSI adapter somewhere out of the bowels of Hackerland (so to speak).

Someone at Maartists thinks I could still use Ensoniq's EPS SCSI adapter with my existing expander by adding a couple of screws, but he wasn't sure. However, I'd rather try to use the proper hardware (in this case, Maartists') before I fall any deeper in the muck.

Perhaps some reader has a lead for me? I would be interested in a new or used Maartists adapter. Thanks for the space.

Sincerely,
Jim Noecker
30 Redwood Road
Saugerties, NY 12477
914-246-9047

For the Interface...

You may have noticed a shortage of ESQ/SQ-80 Hackerpatches in these pages recently. Lest you think I've gotten lazy, I'd like to explain the problem. Nothing serious - it's just that I no longer own either of those keyboards.

When newer keyboards relegated my ESQ-1 to a corner, I sold it to a friend, who kindly allowed me to use it for Hackerpatching. But recently, I made an escape from Los Angeles, and have been ESQ-less ever since.

Is there a friendly SQ-80 (or ESQ) owner in the Houston area who would let me borrow their keyboard for a day or two? In exchange, I'll be glad to give them a copy of each of my Soundsets (there are four sets of 40 patches) and I promise I'll diligently

work up many months of ESQ/SQ-80 Hackerpatches. If that sounds like a good deal to anyone, please give me a call.

VFX and SD-1 owners: show me your wares! I'm always low on Hackerpatches of this variety. Dig up your favorite original patch, and either jot down the parameters, or copy the patch to disk and send that in. Somewhere in a past issue was a blank VFX patch sheet. I'd bet that the Hacker would even send you a copy of one for a SASE.

Sam S. Mims
Syntaur Productions
Houston, TX
713 965-9041

Dear Interface:

Regarding Keith Barnes' letter in the January '93 Interface section: I too would like to see 76 keys become the standard for any and all high-end keyboards. As a gigging professional, the ideal 88 weighted keys are a bit too much to get around without a two-man road crew (I'm the road crew) and 61 keys just aren't enough - especially if one does a lot with piano patches where a good full range (or close to full range) keyboard is necessary. The ASR-10 is the first piece of hardware that I've seen in a long while that I would consider buying. It would be much more attractive with a 76-note keyboard.

Best regards,
Jim Piekarski
Denton, TX

Dear Transoniq,

Thank you for your helpful magazine. I am writing to you about some software bugs that I've seen in my SD-1 (32 voice). Some months ago I upgraded my system by selling my SQ-80 and buying a VFX-sd II which I upgraded to an SD-1 32 Voice. The two major problems that have not been solved are as follows.

1. When a sequence is running (and I do save changes - changes of tempo, volume and other similar operations) and then I change to another sequence, that is go from

sequence 1 where I did the changes to sequence 2, the display prompts with:

"SAVE CHANGES TO <<NAME OF THE SEQ>>. *YES* *NO*

When I push YES without stopping the sequencer, the changes I've saved are not stored in the old sequence, #1. Did I do something wrong? What? I have set the option to Save Sequence Changes to ON. Must I set something else to a specific parameter to automatically store the changes without stopping the sequencer? What's happening? When I stop the sequencer and answer YES the changes are correctly stored, but this does get a bit tedious.

[Sorry, Claudio - we can't make out your writing or your problem for number two. - TH]

One last question: Why must I use an additional oscillator to obtain a Q (resonance effect) instead of inserting an option in the filter page (without using an extra voice) - as in the old SQ-80 and ESQ-1?

Please help me,
Claudio Sansilvestri
Barasso, Italy

[CS - Sorry, Claudio. The changes you make to the sequence will not be saved unless you answer YES to the SAVE CHANGES? prompt while the sequencer is stopped. You have correctly set the SAVE CHANGES parameter to ON; setting it to OFF will cause the sequencer to discard any changes you've made when you select a new sequence.

As to your other question, I'm not sure I'm understanding you correctly. There is no need to use an additional oscillator to obtain a resonance effect; in truth, there is no true resonance parameter associated with the SD-1. Resonant filter effects are generally simulated by using one or more of the Transwaves in a sound - particularly any of the RESONANT Transwaves. You

can create very convincing filter resonance simulations using a single voice playing a Transwave, though, so I'm not sure I understand why you think you need to use an extra oscillator to accomplish this.]

[Ensoniq - The issue here is that the SD-1 does not have resonant filters, period. The Transwaves offer the sound of a resonant waveform, not a filter that other sounds can be shaped with. It does a lot to provide the classic sound of analog resonance but it is not a filter. Our older products used analog filters for each voice which provided resonance control. With the amount of polyphony available today, using separate analog filters for each voice is impractical. When designing the oscillator chip used in the SD (and actually everything we made from the VFX through the current KS-32) we decided to implement multi-mode digital filters rather than resonant lowpass filters, because of the greater flexibility in generating a wide variety of sounds. Nothing against resonance - we will certainly consider it in future chip designs.]

Dear TH/Ensoniq,

Two years ago I purchased a VFX-sd in Halifax, Nova Scotia and as did many such owners, experienced problems. Had I not had the Hacker, I would have felt that my problems were unique. After seeing the letters which addressed this series of problems exactly as I experienced them, I decided to complain.

As Ensoniq suggests in this forum, I contacted them first. Initially, they suggested the usual repair (due to "Keyboard Calibration Error," etc.) The corrective work was done and then the effects processor started malfunctioning and notes started sounding ad libitum and out of tune, etc.

Another barrage of phone calls and letters ensued and everyone agreed that this should, again, be corrected. I put my VFX-sd into its shipping box (cradle? cof-

fin?) and shipped it to Kay Sound in Quebec, our nearest repair station (650 miles) who could not have been more helpful. The owner, Mark Collisky, personally contacted me regarding the progress of my VFX repairs. At this point I decided to upgrade to the SD-1 (32). Words cannot describe my satisfaction with Kay Sound. If I asked for X, I got X².

I know they were in constant contact with Ensoniq, so they and Buckley's Music in Halifax are to be thanked. If there are any SD-1 owners who would like to correspond please write to me at the address below.

A very happy customer,
Dan St. Amand
Box 151, 125 Belgrave Dr
Winsloe, Prince Edward Island
Canada C0A 2H0
(902) 566-1986

[CS - The initial difficulties with the VFX-sd keyboard have all been ironed out, as I understand the situation, but rumors of reliability problems about Ensoniq products persist (encouraged, in part, by some non-Ensoniq dealers). I would like to go on record as an Ensoniq user who has had extremely good experiences in the reliability department; I've been using a combination of the EPS-16 PLUS rack with an SD-1 in live performance for two-plus years now, playing anywhere from two to six nights a week in smoky, dusty clubs. To this day I have never had a problem with either piece of equipment (and my wife once dropped an SKB rack containing the EPS-16 PLUS rack out of the back of our van onto the pavement!)]

[Ensoniq - Dear Dan,

We're glad to hear that everything worked out well, and we'll send a copy of your note to Mark Kalisky as well. Thanks for giving us a chance to make things right for you.]

Dear Hacker,

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I found the article by Rob Berman to be very interesting. I am, also, in the process of multi-track dumping (SQ-80 to VFX-sd) and I've experienced the same out of sync track problem that he related. I had contacted Ensoniq by phone and letter but never got anyone to understand (or believe) the problem really existed. Now obviously Rob Berman must be well versed in track editing and had no problem in rectifying the problem whereas I've resigned myself to erasing the whole track and rerecording it over again from the beginning which was the only way to get it back in sync (as opposed to rerecording the track from where the out-of-sync events begin - which never remedied the problem.) Needless to say, this is extremely annoying as well as time-consuming. This problem also presents itself when I am appending sequences together. Since many of my sequences are simple, I'm forced to append them into song lengths otherwise I'd be using up all my sequence spaces while letting all that memory go to waste. I average 15 to 20 songs per bank.

The problem usually, but not always, occurs when using a track in the later sequences.

For example, I'm using sequences 2 through 5 with sequence 1 being the template in order to insure uniformity between each sequence and avoid any "tracks partially appended" messages. In sequence 3 on track 5 I may put a few pick-up notes which, in sequence 4 of track 5 turns into a lead line. Bear in mind that I quantize *everything*. When playing back the separate sequences (or in song mode), if I hear that slight gap between sequences I know I'm in trouble if I'm going to append. I have also tried using the "shift" function, but for the life of me, I have never heard any sort of difference on *any* track that I've ever shifted even when going to the extremes. Is there something Ensoniq forgot to mention in the manual? They've certainly done it before. Or is it just my machine which has never proved to be half the workhorse that the SQ-80 has been? Anyway, can anyone there (preferably Rob if he's available) tell me how to recognize the offending key-down event (and, hopefully, keep it simple) and maybe even try doing some appending on his own to see what I mean?

Also, I have a few unrelated inquiries. I'm

wondering if (since the value of these keyboards depreciates as fast as a freshly driven new car) the price of the VFX-sd upgrade will come down at all in the future? (Which is the whole reason behind freeing up my SQ-80.)

I'm also curious to know if there is a Hackerpatch for thunder and rainfall. I'm interested in any kind of "effects" programs, actually. Didn't someone mention, last issue, that a "wind" Hackerpatch would be forthcoming soon?

And finally, for now, I have one more pressing problem. I was just given a floppy disk cleaner (I sometimes have to update my disk files twice because I often get disk error messages on the first try) and I'm not exactly sure if I should use it. I see the need to try and keep the disk drive clean, but would it be prudent to use the cleaner? A computer-type friend of mine tells me it's best to check with the proper authority before attempting such an endeavor. Would it hurt to spray contact cleaner into the drive? (He said it shouldn't but he wished not to be quoted.) If I do use the floppy disk

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cleaner, would I use the "format" function? (It didn't exactly come with instructions.)

Anyway, thanks for your time,
Nick St. John
Las Vegas, NV

[Robby Berman replies - If I read your letter correctly, you're rerecording out-of-sync tracks in sequences that you've already transferred. I think you'd be better off to re-transfer the sequences minus the trouble track (using the eliminative process I detailed in my article). This is because I've found that such tracks are likely to corrupt the sequence altogether, sometimes invisibly. All the appending you're doing might be bringing it out.

The rhythmic gap you describe between sequences is something else altogether. I'm afraid it's just something that happens in the 'sd/SDs from time to time, and it's been written about in the Hacker before. In reply to reader Bob Henderson's letter in the January, 1992 issue, Clark Salisbury suggested that too many note-ons at the downbeat of a sequence could cause it to come in a hair late. There's a whole article on it by Roshan Kumar in the April, 1992 issue.

If you're trying to fix the inter-sequence gap with track shifting, forget it - and not because the feature doesn't work. Events just can't be shifted earlier than bar 1, beat 1, clock 1, since that's the very beginning of the sequence and the whole dang shebang is just a millibleem late. To verify that you don't have a hardware problem, you might try recording a new sequence playing notes on the second and fourth beats. Track shift them by a value of -96 and see if that doesn't move the notes to beats 1 and 3.

By the way, I myself have a thunder patch for the SQ-80, which I've sent along to the Hacker for you.]

[TH - That "wind" patch mentioned in Issue #90 was referring to wind instruments - and it was for the VFX. Robby Berman's thunder patch will appear in a future ESQ/SQ-80 Hackerpatch. Michael Mortilla did an article on effects for the SQ-80 in Issue #50 and included patches for Roars, Frogs, Cats, and Quakes. Kirk Slinkard provided us with Buzz, Feedbk, Hum, and Noise in Issue #58 and a bevy of Star Trek sounds in #62. (All still available.)]

[CS - I have found that dumping multi-

channel MIDI sequences can be a bit dicey no matter what sequencer you're using - particularly if the sequence you're dumping is fairly dense and/or contains a lot of controller data. For the best results, I usually dump tracks one at a time, with the master and slave sequencers synced, but this can be time consuming. I also tend to do multi-channel dumps at normal (and sometimes slower than normal) tempos, rather than speeding up the tempo to save time. I've also found that the timing used in the master sequence can affect whether or not a dump works properly; sometimes quantizing the master sequence (or just selected parts of the master) can help.

I don't know, but is it possible that the controller data from the SQ-80 is giving your VFX-sd some problems? As you probably know, each time a new sequence begins playing in the SQ-80, volume and program change messages for all the defined tracks are sent. This might present a fairly large chunk of data for the VFX-sd to swallow in a single chunk. You might try setting the SQ-80 to send KEY EVENTS ONLY (from the MIDI page). Of course, if you have one or more tracks that have controller data you wish to send this might not be the ideal solution. In that case, though, you might try doing a multi-channel dump of all the other tracks first, and then dump the tracks that have controller data you wish to preserve.

The SHIFT function works fine, and with quite obvious results on my machine. It's pretty easy to use - just select the track you want to shift, press the EditTrack button, press the soft button above the word SHIFT, and use the Data Slider or the Up/Down Arrow buttons to set the shift amount (positive values shift the track behind the beat, negative values shift it ahead of the beat). Once you've dialed in the shift amount, just select *YES*, and you should be in. Of course, you can elect to play or keep either the old or new version track. If this doesn't work for you, I'd suggest contacting Ensoniq Customer Service at (215) 647-3930; they should be able to help.]

[Ensoniq - We don't recommend cleaning disk drives on a regular basis. However, if your drive is used a lot in smoky or dusty environments and you are experiencing disk problems, give it a try. DO NOT USE CONTACT CLEANER! Use only a disk head cleaning kit available from computer stores. The head of the floppy drive is a sensitive electromagnetic device, not a contact. Many

contact cleaners contain solvents which can dissolve the head laminations, or conductive lubricants which work great on switches but impair magnetic sensitivity.]

Dear Hacker,

I've owned a copy of Oview since having a VFX and have been very pleased with it except for the fact that it was very slow. To alleviate this, I put 70 ns memory in the 286 computer and it still worked fine. I later added an IDE drive to it and have finally found the speed to be acceptable... except now I can't load any of my patches out of the computer's files. It says something like "unable to open file." I tried putting a fresh copy on another drive in the hard disk but still with no avail. Has anyone else had this problem?

Dara Jones
CS: [71055,1113]

[CS - I've had no real experience with Oview in this configuration, so I'm going to open this one up to the readers. Anyone care to comment?]

[TH - Does Oview provide some way to check/set the path? Can it read files that have been saved via Oview?]

Hacker Friends,

This is just a quick followup to my last letter. I would like to thank the kind gentleman who called regarding the EPS-16+/ASR-10 disk compatibility problem. I was able to listen to his message once but before I could get his name or number it got erased.

It turns out that when the ASR sees a HD disk in its drive, it automatically assumes that it has been formatted as an ASR disk. A HD disk that has been formatted on the 16+ will look, to the ASR, like an improperly formatted ASR disk, while a DD disk that has been formatted on the 16+ disk will look like a properly formatted EPS disk.

The workaround suggested by my anonymous benefactor is elegantly simple. To trick the ASR into seeing the HD 16+ disk as a DD 16+ disk (which is what it wants to see), one simply has to cover the extra little hole on the HD disk to make it look (as far

as the ASR is concerned) exactly like a DD disk.

Great idea! Thank you.
Barry Carson
Minotaur Studios
Canton, NY

[CS - Thanks for the tip, Barry. Now the caveat: Be careful what you cover that little hole in the diskette with. Disk drives become extremely unhappy when asked to read anything besides a disk. And I don't think that the Ensoniq warranty covers Hubba Bubba-related disk drive problems.]

[Ensoniq - Your idea will work fine for situations like yours, but we'd like to add that since the EPS-16 PLUS uses a DD drive it makes no economic sense to use HD disks unless you have to. They cost more and you won't get any more data on the disk.]

Dear TH and Ensoniq,
Part 1

Please help. I have an EPS-16+ rack and think about upgrading it to an ASR-10 rack. In order for me to justify the investment the ASR-10 would have to meet two requirements. First, it would have to be able to handle digital in and out. I know other

samplers have it. The reason I need it is for backup storage for all my samples and so I won't need to worry about disk crash. I would like to use Sony mini disks. Second, it would need a 40 meg internal hard disk for live performance sound access and for continuous loading and resaving of samples. I saw an article in TH about how to install a hard drive yourself but I wouldn't want to mess with it myself. Is Ensoniq considering adding this feature to the ASR-10 rack?

Another thing is that I am not sure if the digital in and out is the same thing as optical in and out. I just want the correct connection so please, Ensoniq, make this available.

Part II - Dear Ensoniq,

I have a VFX-sd. When I first found out about the new SD-1 I was a little disappointed knowing that it is only an extended version of the VFX, however, now I look at it differently. I see now that it is a great advantage to get a new synth that is fully compatible with its predecessor. When I do get the SD-1 I won't have to start at a ground zero learning stage and I'll already have thousands of great sounds and sequences to transfer from the VFX disks. My question to Ensoniq is will this policy of continuous upgrading of synths continue? Will your next synth be compatible with the

VFX/SD family? Is the SD the end of this synth's line? If the next synth will be compatible with the SD I will buy it. Maybe it sounds funny but I would really like Ensoniq to be my family and that's why I'm trying to find out if you can keep a commitment too.

Sincerely,
Yaroslav Kotkowski
Brooklyn, NY

[CS - An optional digital I/O is slated for release by Ensoniq for the ASR-10, although I don't know how soon. Ensoniq can provide you with the specs, but I believe will be a coaxial connector.]

[Ensoniq - The DI-10 digital I/O interface will use a coaxial input, not optical. It will use the standard SPDIF format. This option will allow backup of hard drive data, but please note that you will not be able to use the new Sony mini-disk format (or the DCC tape format) as a back-up medium, because both of these systems use psycho-acoustic-based data compression and will not accurately reproduce the data that is put into them.

DAT tape is the medium of choice for archival data backup because it is a linear data system: what goes in is what comes out. There are no plans at this time for an internal hard drive for the ASR-10R, however the built-in SCSI interface allows you to select from a wide range of fixed disks, removable cartridge formats and CD-ROM devices, all of which are available in rack-mount configurations. You can even get a SCSI drive and DAT back-up drive in a rack configuration, if needed.]

Tested and Approved Hard Drives for the EPSs

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

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

Drives Reported to Work by Readers

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

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

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
VFX	2.30	KS-32	3.00
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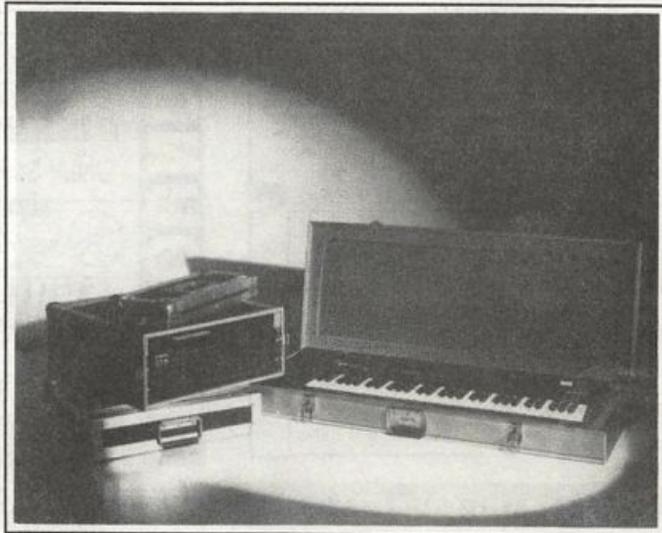
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