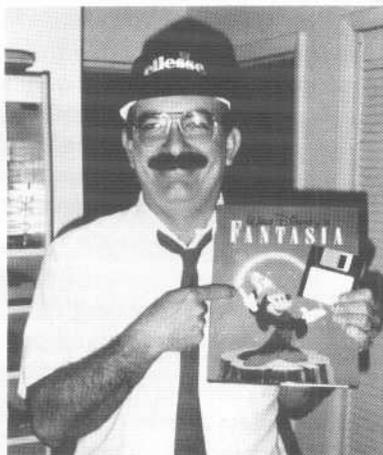


Power Tools for the Serious Ensoniq Partisan Gary Giebler's Amazing Utilities

Pat Finnigan



Product: The Ensoniq Disk Manager (EDM) and Ensoniq MIDI Manager (EMM).

For: EDM is for all Ensoniq keyboards with disk drives and IBM-PC or compatible.

EMM is for the VFX and the SQs using an IBM-PC and MPU-401 card or equivalent.

Price: \$22 per module, \$44 per instrument package including Disk Manager Utilities.

From: Giebler Enterprises, 8038 Morgan Rd, Liverpool NY 13090-2009. (315) 652-5741.

Gary Giebler is a bit of a remarkable guy when it comes to reverse-engineering Ensoniq operating systems as anyone who has read his Ensoniq Disk Format articles in the July, August, and September '91 issues of the *Hacker* can attest to. But like many of us who never owned one of those SQ-80s I sorta glossed over his articles thinking that's all the articles were about. I mean, hey, disk file formats are pretty deep coded stuff, but who's using an SQ-80? How many of those things could Ensoniq manufacture in 16 months?

Naw, not for me; I'm chasing down EPS goodies and searching for the ultimate SQ-1 patches. What, I'm gonna waste my time reading about file structures of discontinued Ensoniq gear? NOT!!!

But guess what? Ol' Gary's been busy; in fact, he's been *real* busy lately. He's actually spent the past coupla years deciphering operating systems for every Ensoniq piece ever made (with the exceptions of the old SDP-1 piano and the Sound Selector hearing aid). He's ingested these bytes and produced some indispensable programs for the Ensoniq novice and professional alike. [Giebler's *SQ80VFX* utility was reviewed in TH #81.] To call these things "utilities" is like calling a Cray XMP-11 a "computer" as these are mondo-powerful file-exchange programs that open doors I always considered locked. Enough of my raving; here's the deal.

These programs translate any Ensoniq sequence file into a Standard MIDI File (SMF). This may not seem like much until you discover it also translates Standard MIDI Files to any Ensoniq product sequence file. Get it? Any Standard MIDI file, you know, like the ones that Encore, Finale, MasterTracks, etc. writes. Any Standard MIDI File that Roland, Yamaha, Peavey, et. al. instruments write to disk. Gary's programs will translate SMF's to any Ensoniq sequencer-equipped keyboard and vice-versa. These packages allow Ensoniq keyboards to play any other manufacturer's sequence. "Hey man, I gotta Korg 01W/FD — try and

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bust my sequences." Sorry, Bucko; you're toast. The Korg Disk Manager and 01W Standard MIDI File translator package is already available for, that's right, folks, the incredibly low, low price of \$44.

Mind you, I'm not suggesting you use this program to swipe other keyboard's sequences (although that does pose an interesting and viable option for a lame sequence band's repertoire), but if you're like me and accidentally (of course!) happened to use an oriental wonder workstation before coming into (or in my case, returning) to the Ensoniq fold, here's the way to use all those Yamaha sequences I did on a QX3 before I got real (yeah, Gary's got a QX3 to SMF program too!). You think floodgates aren't opening? How about being able to download Standard MIDI Files from any bulletin board, whip them into your favorite friendly Ensoniq keyboard, and hit it, just like THAT? Sure, you're gonna have to edit things like what instruments on what tracks, really heady stuff, right? Push a couple buttons, make a preset and press play. Example: OK, you just traded up to an EPS-16+ and love it, it slices and dices with 16-bit perfection, it makes your old samples sound better. But try loading an EPS Classic sequence into it. Oops! Crash, burn, etc. Different file format; won't load. You've got meg upon meg of really fresh, buffed EPS Classic sequences that you can't use unless you borrow your old EPS and record each sequence track-at-a-time real-time into your 16+ (yawn). Not to worry; boot up your PC, load the Midi Manager disk, load EPSSMF.EXE, follow the prompts, and presto, here's your new EPS-16+ sequence. DONE.

Rather than run through a step-by-step process of the use of these products, I'll just outline it for you. Turn on your computer and install the utilities to your hard disk. MIDI up to your Ensoniq keyboard. Turn the keyboard on (and boot, if RAM-based OS). Launch EMM and the appropriate *.exe file for your particular flavor Ensoniq keyboard. Follow the prompts and instructions on your computer monitor (yes, this is a menu-based program). That's it! Gary must've figured we'd be hung up in Ensoniq O.S. architecture and made this program as simple to use as possible; so simple, in fact, its power is almost undermined by its ease of use. I took an EPS song, translated it to a SMF, converted it to an SQ-1 song, and it played back flawlessly. Then, just to torture the program, I took the same SQ-1 song, translated it back into an SMF, and converted it to an EPS-16+ song. It played without a hitch, and after further reading, the SMF translation allows pretty slick things to be done with extra/leftover tracks (a 12-track song from an SQ-1 into an EPS Classic, for instance).

No, I'm not gonna tell you everything, but I will say that Gary has some excellent ideas (data filtering during translation, for one) that are even more powerful than certain Ensoniq sequencer functions. Here's the last mondo function I'll share with you for free. The Ensoniq Disk Manager (EDM) lets you copy VFXsd and SD1 sysex files to your computer's hard disk. Once saved there, change the file extension from *.EFV to *.EFQ. Now the Ensoniq MIDI Manager (EMM) program can read the sysex data directly and send it to your SQ-1/+2 directly (read without a VFXsd or SD1).

For all the surprises and real info on these programs, you're

just gonna have to buy it. I used it for a week before I discovered how selective the data filters operated. Besides, at \$44, it'll pay for itself the first time you use it. You get the Ensoniq Disk Manager (the program that (a) genetically alters data for protein synthesis on other Ensoniq keyboards, and (b) writes/prints directory labels for your Ensoniq disks), plus the SMF translator, modest upgrade fees (plus the Ginsu steak knives) for your \$44. This much raw power at this ridiculous a price? All your colleagues' SD1 and VFXsd playing on your SQ or EPS? You're nuts to pass this by. The SQ-80 utility is uni-directional at this point (SQ-80 to SMF only), but Gary says he'll have the two-way street open in the next couple months. Judging by his intense love of programming, I wouldn't doubt he's beta-ing the version by the time you read this. . .

If you're looking for exploding icons and wallpaper bitmaps in these programs, go spend \$795 for Finale, \$99 for Windows 3.01 (available mid-May when beta'd), and \$200 for 4 Meg of RAM, 'cause you'll need all these things just to boot Finale (or any other similar program), and it still won't convert Standard MIDI Type 1 and 2, Enigma Transportable, or Performer files to Ensoniq format. And best of all, Gary's programs were designed to be run on a very modest MS-DOS platform with 640k RAM and a 3 1/2" floppy disk (hard disk not required but preferred). If that's not very exciting to you, sell your computer and your friendly Ensoniq gear and consider a career in fast food management.

Finally, at long last, we have an unfathomable library of sequences at our disposal/perusal thanks to this program. These programs are an educator's dream; an unlimited library of music sequences from which to pick and choose to demonstrate style, technique, rhythm, tonality, alternate tunings (there are pitch tables in Ensoniq instruments, remember?), cultural/ethnic variation, both visually with notation software, and sonically with any Ensoniq product and these gonzo "utilities." There's the real use of these programs. The Macintosh community has had the equivalent if AFEX (the Apple File Exchange) in which document files saved by any Macintosh could be translated into any MS-DOS based text file since System 6.0.5, circa 1989.

I feel very fortunate that Gary Giebler has taken the time and resources to confer the same standard of exchange among music files. The \$22 to \$44 for his programs are merely a stipend considering the enormous amount of programming and assembly involved. And he calls these "utilities"? Gawd, I wanna see his "programs"! The documentation included is superb; file types of every Ensoniq product are given with examples. The "Read.Me" file on disk is an owner's manual, reference manual, examples manual, "what-to-do-if" manual (Print this file for the book of wonders). Gary'll have a Midi-ator driver available (for laptops that use the parallel port (LPT1) as a MIDI interface) in a couple months, so stay tuned. He's a very affable person who was more than happy to answer my questions on more than just a couple of items. He's got choir rehearsal Tuesday nights, so try not to bug him then. Any other evening he's available for any comments or suggestions

(Continued on page 5)

RND (🎵🎵🎵)

Ensoniq News

See "Errata" and "Clinic Dates" elsewhere in this issue.

Hacker News

"Send-Us-Your-Hard-Drive-Experiences-Contest" Winner: A couple weeks back, Clark Salisbury drew our lucky winner's name out of a hat. And the winner is.... Ben Ash, of Birmingham, Alabama. Ben has already received his Hacker T-shirt and has selected the Craig Anderton Signature Series volume as his prize from Ensoniq. Ben says he's "... a bit surprised, but very delighted..." Thanks to Ben, everyone else who participated, Ensoniq for contributing the prize, and Clark — for coming up with this in the first place.



Ben Ash (We assume this is *before* he found out.)

* * *

Bad News/Good News Dept.: The bad news is that international mailing rates have been shooting up over the last year and our international mailer has finally raised their rates to us. We're going to have to raise our non-U.S. subscription rates by \$2/year (to \$32/year) to cover the difference. The one bright spot in this is that it no longer makes sense for the Canadian and Mexican issues to go through the international mailer (via England!). These issues will now be mailed directly from TH-HQ and should get to subscribers a couple weeks earlier.

* * *

We **REALLY** could use some more SD/VFX Hackerpatches and SQ-1/2 and SD-1 articles! Get busy and get famous.

Third Party News

Electro Acoustics, producer of EPS samples, has moved. The new address is: 1504a Hickox St., Santa Fe, NM 87501. The phone number remains unchanged — 505-986-0578.

Well, there goes another advertiser... Congratulations to **Trivia-tons!** Word has it that Ensoniq has made an agreement to distribute their sequences through Ensoniq's network of dealers. Check 'em out. (Now, if only Ensoniq would ever advertise here...)

If you've been toying with the idea of entering the third-party support business — now's probably a pretty good time. The recession has had its toll on third-party vendors and the field is probably as open as it's going to get. Enter now while it's near bottom, establish market share, and grow with the next cycle up.

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.

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

HARD DRIVES & DRIVE SYSTEM – Rob Feiner, Cinetunes. 914-963-5818. 11 am – 3 pm EST.

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

EPS & EPS-16 PLUS QUESTIONS – Garth Hjelte. Rubber Chicken Software. Pacific Time (WA). Call anytime. If message, 24-hour callback. (206) 467-5668.

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

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

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

SAMPLING & MOVING SAMPLES – Jack Loesch, (201) 264-3512. Eastern Time (N.J.). Call after 6:00 pm.

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

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

SQ-1 QUESTIONS – Pat Finnigan, 317-462-8446. 8:00 am to 10:00 pm EST.

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

BACK ISSUES

Back issues are \$2.50 each. (Overseas: \$3 each.) Issues 1–9, 11, 13–23, 27, 29, 30, 35–38, and 67–70 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 started with Number 30. (But didn't really get going till Number 35.) VFX coverage got started in Number 48. Permission has been given to photocopy issues that we no longer have available – check the classifieds for people offering them. Reprints in our "Quick and Dirty Reprint Series" are available: *Mirage Operations*, for \$5, and *Mirage Sample Reviews* for \$4. Each contains material from the first 17 issues.

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- *Keyboard Review, Nov '91*

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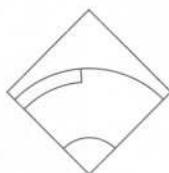
- *Herbie Hancock*

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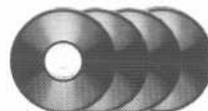


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for improvements you might have. Just call to find out how much other stuff he's getting into (when you order, right?)...

I rarely give rave reviews of software because it's as subjective an analysis as grading sound patches (one musician's roast pheasant is another's turkey). Since these are object-driven programs, results are definitive, valid, and reproducible. To ignore the existence of such translators in, of all places, the *Hacker*, is just plain stupid. I just didn't know what I was dealing with. These "utilities" are as necessary for Ensoniq users

(especially those of us with multiple Ensoniq pieces) as DOS is to a PC. If ratings mean anything, I bought the SQ package. But you really can't grade these truly exceptional works of art, because there's nothing to compare them to. You see, they're the only Ensoniq cross-utilities ever written... ■

Bio: Pat Finnigan is a service tech turned musician who writes secret messages in sequences on his EPSs, wondering how much harder he can push this Malvern silicon before it reverts back to sand. His latest composition, The Ensoniq Suite, has been banned by Hans Solo, but is available on EPS disk since it isn't an audio medium and violates no community standards.

VFX-sd and SD — a Minor Quirk Toward a Better Understanding of the Sequencer's Scale Function

Michael Mooney

The SD/VFX-sd has one of the most flexible onboard sequencers currently available. But it too has its share of eccentricities that can be confusing when first encountered. One of the most confusing to me was the Scale Function of the Track Edit Page. The manual gives a sketchy explanation of what can be accomplished here, but fails to fully explain this function.

For a long time I mistakenly thought that since the values for the scale amount wouldn't turn negative, that the Scale Function could only work positively. That is, you could increase the value of a controller but not decrease it. Seemed a little odd. The manual, with its limited description did little, frankly, to discourage this line of thinking although it did say, which further confused me, "The Scale command lets you increase or decrease the level of any controller..." The question remained then, "How?" And what exactly do the increments of the scale amount mean? Nowhere in the manual is this information provided, but after a bit of experimentation, I discovered the missing key to understanding the Scale Function.

It's really quite simple. The values of the Scale Amount are, (duh), a *multiplier*. The amount selected will multiply the scaling of the controller by that amount. For example, a value of 2.00 will obviously double the value of the selected controller(s). And to decrease the value of a controller punch in values less than one (e.g. a value of .25 will scale it down by a factor of 4, etc.).

So how does this work in actual practice? Create a short sequence using a bass sound. Next, enter the Scale Function from the Track Edit page and scale all the key velocities by 9.00. This multiplies all velocities by nine assuring the maximum velocity of 124. You can enter the Event List function to verify this. Next, scale the track by .50 and enter the Event List to view the results. All velocity values will now be 60. This is because the VFX sequencer increments values by four instead of by one. (Another Little Quirk.) Anyway, since the original

value was 124 you'd expect to see a new value of 62. Since this is an illegal value, it rounds it down to 60.

So there you have it. A minor clarification. ■

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Ensoniq - We're very excited to announce the first shipments of our DP14 Parallel Effects Processor. You can see/hear it in action at the following Ensoniq clinic dates:

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5/14/92	Sound Deals	Birmingham	AL	(205) 979-1811
5/12/92	AB Stephens	Huntsville	AL	(205) 880-1234
6/27/92	DB Music	Anchorage	AK	(907) 278-5356
5/13/92	Nadine's Music	Hollywood	CA	(213) 464-7550
5/12/92	Goodman Music	Sherman Oaks	CA	(818) 784-6900
5/14/92	New World Audio	San Diego	CA	(619) 569-1944
6/02/92	Leo's Audio	Oakland	CA	(510) 652-1553
5/05/92	K & K Music	San Jose	CA	(408) 998-4850
6/10/92	Prosound	Denver	CO	(303) 751-7575
6/09/92	Prosound	Boulder	CO	(303) 444-1731
6/11/92	Prosound	Col. Springs	CO	(719) 597-9962
5/05/92	Delaware Music	Wilmington	DE	(302) 478-6500
5/19/92	Band Central Station	Gainesville	FL	(904) 371-9057
5/20/92	Music Arts Enterprises	Ft. Lauderdale	FL	(305) 581-2203
5/21/92	Thoroughbred Music	Sarasota	FL	(813) 351-7793
5/22/92	Tune Town	Leesburg	FL	(904) 326-2143
4/30/92	Ken Stanton Music	Marietta	GA	(404) 427-2491
5/26/92	Atlanta Discount Music	Atlanta	GA	(404) 457-3400
5/28/92	Pro Music	Gainesville	GA	(404) 535-2370
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6/23/92	Soundpost	Mt. Prospect	IL	(708) 259-0470
4/30/92	Soundpost	Skokie	IL	(708) 679-6070
5/07/92	Gand Music	Northfield	IL	(708) 446-4263
5/28/92	Soundpost	LaGrange	IL	(708) 352-3338
4/29/92	Naperville Music	Naperville	IL	(708) 355-1404
6/25/92	Rubino Music	Merrillville	IN	(219) 736-9344
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6/22/92	Dave Phillips Music	Phillipsburg	NJ	(908) 454-7868
6/03/92	Grandmas Music	Albuquerque	NM	(505) 292-0341
5/20/92	Manny's	New York	NY	(212) 819-0576
4/30/92	Palomba Music	Bronx	NY	(212) 882-3700
5/19/92	Alto Music	Middletown	NY	(914) 692-6922
4/29/92	Alto Music	Monsey	NY	(914) 352-6275
5/05/92	Only Guitar Shop	Clifton Park	NY	(518) 371-1232
5/07/92	Onondaga Music	Syracuse	NY	(315) 422-8423
6/09/92	Peates Music	Utica	NY	(315) 735-8563
5/27/92	McNeil Music	Binghamton	NY	(607) 729-1548
6/11/92	Unistage, Inc.	Buffalo	NY	(716) 853-6500
5/06/92	House of Guitars	Rochester	NY	(716) 544-3500
5/28/92	McNeil Music	Ithaca	NY	(607) 257-1142
6/11/92	Coyle Music	Columbus	OH	(614) 885-2729

6/17/92	Lentines Music	Cleveland	OH	(216) 741-1400
6/18/92	Lentines Music	Akron	OH	(216) 434-3138
4/29/92	New York Music	Boardman	OH	(216) 758-4705
6/10/92	Buddy Rogers Music	Cincinnati	OH	(513) 931-6780
5/13/92	Del City Music	Del City	OK	(405) 677-8777
5/12/92	Music Sound World	Tulsa	OK	(918) 664-2555
5/12/92	Portland Music	Portland	OR	(503) 226-3719
5/13/92	Keyboard Assoc.	Eugene	OR	(503) 343-1978
5/14/92	Southbound Sound	Coos Bay	OR	(503) 269-1928
6/02/92	Pianos & Stuff	Blainnox	PA	(412) 828-1003
6/10/92	Osiecki Bros	Erie	PA	(814) 453-6565
5/07/92	Stephen Nicholas	Lancaster	PA	(717) 569-8100
4/28/92	Robert Sides Music	Williamsport	PA	(717) 326-2094
6/23/92	Louie's Keyboards	Scranton	PA	(717) 343-2002
6/25/92	George's Music	North Wales	PA	(215) 699-4040
5/26/92	George's Music	Spring City	PA	(215) 948-0780
5/07/92	Express Music	Spartenburg	SC	(803) 583-6768
6/09/92	Music Man	Nashville	TN	(615) 833-7000
6/11/92	Amro Musitron	Memphis	TN	(901) 323-8766
6/01/92	Holze Music	Waco	TX	(817) 776-1350
5/26/92	H & H Music	Houston	TX	(713) 531-9222
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Mind Music & Mellow Matrices

Daniel Mandel

Tape: *It's Time for Your Medicine*
 Artist: Alan Roger Nichols
 Contact info: 857 N. 900 West Salt Lake City, Utah 84116

Equipment: "My lil' ol EPS, X4 OEX'd with added guitar, sax and (PEVCO?) on the other side to add a little more humanity."

It's Time for Your Medicine is really quite a good tape. This is entirely instrumental music. Alan's crew of musicians who play on this project are as follows: Randy Hall on guitar, Steve Braithwaite on sax (finally a real sax player!), Guy Nickerson on guitar, Jerry Ziegler on fluegelhorn and percussion.

The J-Card is an impressive display of cover art with cosmic fiery images and an expansive horizon done in what looks like colored chalks.

The most striking thing about this tape is good playing, good chops. This is mind music. It twists and turns. The piano patches are wonderful and wonderfully articulated. Alan has managed to really focus on the artistic — "what can we do with this puppy?" and he has done it! The mood changes are exciting, thought provoking and abrupt. Yeah, in a few instances they seemed inappropriate and rude. However, when you listen to the whole tape, I'm convinced that Alan is definitely in charge of his musical whimsy, so I don't think those instances were oversights or mistakes.

He can make his piano pulsate rhythmically — without effect — while playing a choppy hard piano lick on top and, without a moment's warning, slam you into a hard rock cavalcade that sends you over the top.

Alan's work would be difficult to categorize for you hard-core pigeon-holers. There's too much of a jazz feeling here to call it rock. And too many funky passages to call it jazz. How 'bout experimental? Of course this implies that Alan is an unfocused and crazy person. Negative! What it does mean is that he's got a talent for expressing himself using the unrelated styles that he probably grew up on.

There was no question of Alan being a sequence guru. Yeah, a few passages were obvious and even predictable. He had to let the sequence ride in order to put the solo's across. Or did he? Well, maybe even Alan could improve that one next time. The thing that matters though is that the solos were worth it. The listening audience, however, will eventually catch up and know when a sequence is a sequence.

This is another tape that can be listened to many many times and can continually be appreciated. When I listen to it in dif-

ferent circumstances it seems to be evocative of a different expression. Deep man, really deep.

Tape: *Matrix*
 Artist: Jim Noecker
 Contact info: 30 Redwood Road, Saugerties, NY 12477

Equipment: EPS, ESQ-1, DX7, RX11 drum machine, Fostex E-16, 4050 Autolocator, A&H CMC24 Board, SPX90II, and DSP-128 effects, Ashly CL50E compressor, and Mac Plus running Master Tracks Pro.

Jim says, "*Matrix* is basically a solo effort (except for guitar, courtesy of Steve Mulvaney) being presented as a project demo. Although I'd be more than happy if the songs stand as they are, I am hoping to gather a few key people (i.e., bass, guitar, and drums) to perform the music live. I believe much more life can be breathed into these songs once they break out of a MIDI-studio environment. Although I am satisfied with what has been achieved on this tape, some "real" drums, bass, etc. would certainly provide a boost."

Jim had an excellent J-card put together. It folded out about a hundred times and included all the information as well as all the lyrics to all nine songs. The lyrics were written by Duane Steffey.

The main thing that this recording could use to improve the overall quality is in the attention paid to the vocals. As this was recorded in a studio and considering the impressive display of equipment I am going to bet that the problem was with the engineering. The vocals here are excellent! They're expressive, emotional and, ahem, in tune. Jim's voice is many sounds. Sometimes it's hurt and pouting, sometimes a little angry and biting. He does a good job of articulating the words but they are set poorly in the mix. In the third song, *LUCKY LIFE*, the background vocals are too quiet, too much buried in the mix. *FROM HERE TO NOWHERE* has the same problem although the chorus is helped by using multiple tracks. The vocals are obviously worth it, so make them more obvious and don't let the music drown them out.

The music is perky and funky with Steve Mulvaney putting in some nice performances on the guitar. The overall feel to this set is kind of light though. There are no dark or ominous tones. For the most part there is not a lot of reverb used on the instruments. There was a nicely placed flange on the drums on *FEAR OF FALLING* and *NO TURNING BACK*. A lot of horns and they are always in your face and relatively dry. It might be cool to mix it up and put the sequenced band in a virtual room that

gives it a bit more echo and space. This brings me back to the vocals again, which could have been a bit wetter.

Jim's sound palette included a lot of older analog patches that wiggle and squirm under his fingers. He used both sampled and synthetic horn patches. The keyboard solo sound on *THE INNER CIRCLE* was another sort of '70s synthesizer sound, well placed and played with feeling. *PASSING THE STATION* is a beautiful song with the flowing ringing patch that could have only come from the ESQ-1 — or that's my guess.

I agree with Jim that it would be an interesting exercise to give a coupla musicians this tape, break it up into separate pieces and see what they come up with. It would, no doubt, be a good show — **MATRIX LIVE!** Send me tickets! ■

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



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

Hacker Basement Tapes List

The following is a list of the tapes we've received so far. There are a couple "mystery tapes" that weren't labeled clearly. If you've sent us a tape and it hasn't been reviewed and it's not listed below, it either never got here, we can't read the label, or we messed up somewhere — contact us! (Note: The order these are reviewed may vary from the order received.)

Artist	Title	Received
Dean Mueller	Untitled	June 1991
Mitchell Mullen	Untitled	June 1991
Jim Snowbarger	Demo	July 1991
Thorne D. Harris III	Untitled	July 1991
J.C. Sebastian	Indianance	July 1991
Anthony Ferrara	Contemporary Guitarist	July 1991
William Penninger	The Accessible Penninger	Aug 1991
Tim Rovnak	Select	Aug 1991
Arnold Mathes	The Obsolete Man	Sept 1991
Arnold Mathes	SQ-80X35	Sept 1991
Bill Sethares	Sequences and Consequences	Sept 1991
Dr. Lawrence Smith	More Folk-Song Fantasies	Sept 1991
Paul Santa Maria	Untitled	Nov 1991
Bruce Lehrer	Seraphim	Nov 1991
Ed Burke	Untitled	Nov 1991
Jim Newton	Boen Marg	Nov 1991
Gordy/Brad Carlson	Against the Grain/ Out of Sight out of Mind	Jan 1992
Paul Glaspie	Sonic Picturescapes	Jan 1992
Bhil N Eym	All the Right Things	Jan 1992
Jim Hanson	Implosion	Jan 1992
Bill Cuillo	The Treasure	Feb 1992
Richard Waters	Petit Mal/World Seizure	Feb 1992
Chris Sable	Rock-N-Roll-N-Rap-N-Soul	Feb 1992
Kevin Wrede	Always Garaged	Mar 1992
Eric Hulien	Fruit of the Vine	Mar 1992
Ted Ulle	Moonlight	Mar 1992

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90 MB	\$629
135 MB	\$739
185 MB	\$889
425 MB	\$1889
680 MB	\$1939

Desktop Models Available

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Errata

Jerry Kovarsky, Ensoniq

The issues of technical accuracy and Ensoniq's involvement in individual articles in the *Hacker* needs to be clarified.

We (Ensoniq) do not see any section of the *Hacker* except the letters in the Interface before you, the readers do. Of course we get the Interface letters in advance so we can answer those questions that are directed to us. No other part of the *Hacker* is under our control or involvement. That is the beauty of the *Hacker*. It is an independent publication by and for you, the loyal owners of Ensoniq products.

Lately some inaccuracies have come to our attention, first in an article by Mr. John Loffink in the December, 1991 issue, and again in the April, 1992 issue in an article by Erech Swanston. The issue at hand is the bit structure of the original EPS versus the EPS-16 PLUS and the implied fidelity and performance of our libraries across these two products.

Mr. Loffink accurately explains that the original EPS has 13 bit RAM memory, and that any data going into that memory and being saved out of it again (to disk or via SCSI) will be 13 bit accurate, even though our disk format is 16 bits.

Where he strays from accuracy is in addressing what he calls "myths" regarding our development of sounds on 16-bit development systems, and that the EPS can play EPS-16 PLUS developed sounds with improved fidelity. He explores an early released disk (which was released before the EPS-M) which is indeed 13 bit data and concludes that these "myths" are false.

To be most accurate he should have contacted me to verify his facts; in addition, the *Hacker* might have brought the article to our attention for any pertinent fact-checking. Please don't get me wrong, his science about the bits is perfectly accurate and I applaud his presentation of that part of the issue. But the article only guessed at the truth of our actions and downplayed other important issues that can affect the fidelity and performance of sound disks.

Then in the April issue Mr. Swanston states that all of our libraries were developed on these 16-bit development systems, and that they all are truly 16 bit on disk. How can both of these articles be true as printed? They can't be, of course.

Let's resolve this issue once and for all. During the development of the EPS-16 PLUS we created 3 prototype EPS's that had 16 bit memory, and we did use them for some of our later sound development. The libraries developed on those systems included SLT-13 and the second volume of the Signature Series. We recently went back to check our libraries and found that not all of the ones we created during that time were still true 16 bit, probably due to some human error in organizing the Banks or demo sequences. Volumes 2 of Paul Jackson and Nile Rodgers are still true 16 bit. So the initial "myth" is true, not to the extent that we had assumed, but based on these very real 16 bit development systems.

What Mr. Loffink's article downplays are other factors that can contribute to improved fidelity in sounds across these two products. Any sample created on the EPS-16 PLUS and then played on an EPS will sound better than one created on the EPS because of higher quality

components in the input sampling circuitry of the EPS-16 PLUS. This is true even though the lowest three bits will be stripped off due to the 13 bit RAM in the EPS. Likewise, samples created on even higher end systems than the EPS-16 PLUS can produce better quality when played in the EPS. The quality of the circuitry of the sampling system's Analog to Digital conversion is an integral part of the final fidelity.

In fact almost all of our libraries from SLT-6 onward were created using state-of-the-art digital recorders, sampling systems like the Dyaxis, and all-digital transfer with Alchemy and later Sound Tools. These all contribute to sound quality that far surpasses plugging a microphone or line cable into an EPS and sampling directly. We have always strived to give our customers the best sound and performance possible, and the quality of these libraries are an example of that effort.

It is also true that original EPS sounds that are in fact 13 bit will sound better when played in an EPS-16 PLUS, due to the better quality output circuitry in the newer unit. Fidelity is the sum of all the parts of the audio chain, not just the number of bits. It is important that you all understand this point and get the full picture, and we saw a mixed message being printed and discussed in the field. We understand, often information gets amplified and then distorted as it is passed from person to person.

All this is to say that these issues are not unfounded rumors or myths, but based on truths that have gotten exaggerated and then not completely explained in these recent articles.

The lessons to be learned:

1) *Hacker* writers — check your facts, ask more questions, and realize the inherent responsibility associated with your writing.

2) The *Hacker* itself — read your articles more carefully; two articles that are in conflict with each other should raise a question that we will be glad to help answer. Now let's all move on to making great music and getting the most performance out of our Ensoniq gear. Happy hacking! ■

[Ed./Pub. comments — We would also like to emphasize to our writers to please check their facts before sending in articles. We don't claim to know everything (or even most things) here and things do slip by. We certainly don't want to be running everything through Ensoniq to get a stamp of approval. The best place to catch this stuff is at the writing stage. (Although the feedback method also seems to be working just fine...) Ensoniq has told us that they will be tickled pink to verify any facts or clear up any questions that writers may have.

Whether or not Loffink "downplays" the other significant features and improvements depends a lot on just what the purpose of his article was — check it out.

As far as Swanston's comment regarding the "16-bit sounds" — we really should have caught that one. All we can say is, "BAD Editor and Publisher! BAD!!!"]

Optical Media International's Samples for EPSs

Rob Feiner

Product: OMI CDP-1B (CD ROM Drive), \$795.
Sonic Images, Volumes 1 and 2, \$399 per volume \$699 for both.
Master Studio Library, Volumes 1 and 2, \$299 per volume.
Denny Jaeger Violin Library, \$499.
For: EPSs.
From: OMI (Optical Media International), 180 Knowles Drive, Los Gatos, CA 95030, 800-347-2664, (408) 376-3511.

The EPS-16+ is a very powerful machine. Much of the hidden power comes from that little 25-pin connector, the SCSI port, at the back of the memory expander. But life with SCSI is a love-hate relationship often times waiting to go sour. Those of you who have ventured into the realm of SCSI (and survived) have truly reaped the benefits of quick access and mega storage. It is not fantasy, it does exist. And now there is a new set of products for the EPS family that brings you a bit closer to nirvana.

Optical Media International (OMI) has introduced several sets of CD-ROM disks of sounds, ready for your EPS system. While OMI may be new to you, musicians have been using their CDs since 1986 when they introduced their products to the users of E-Mu systems.

The Drive

OMI submitted a CD Rom drive (CDP-1B) and several disks to the *Hacker* who in turn sent them on to me. The box contained an OMI external ROM drive (made by Sony), a disk "carrier" (designed to hold the disk that is placed into the drive), a 6 foot 50-to-25 pin interconnect cable, and along with the disks, a comprehensive manual that unfortunately said nothing about the Ensoniq EPS. In reality, it didn't matter because the physical setup is similar to most of the other instruments that are covered in the manual. I imagine that since the EPS is new to OMI, new manuals are forthcoming.

The drive itself has L/R audio outs for hook-up to a stereo system or console for sampling audio CDs (a nice touch) and measures 2" high, 7" wide and 13" deep. It is obviously not a rack unit but it did fit nicely on top of my tower case computer. The CD ROM drive is designed to reside in-line in a SCSI system so it is left un-terminated and shipped that way. OMI sells a 50 to 50 pin external terminator for \$15 and is now considering including it for free with the purchase of their drive. The hook up, even without the use of the manual, was very easy and I encountered no problems at all.

File Structure and Organization

Since the CD ROM disks have no OS on them, the booting process is either from floppy or another hard drive in the SCSI chain. The drive will show up on whatever SCSI ID you have chosen. Once you have "Changed Storage Device" and punched "Load-System," the EPS will then see the contents of the disks. Easy, right? You

bet!! In fact, it was too easy; I was expecting a disaster but it never happened. The directories are laid out with specific names as to their contents and instrument access is the same as with a hard drive. Just load and play.

The Disks

The disks typically contain over 200 megabytes each and the Denny Jaeger Master Violin Library is over 350. That's a lotta sound. There's too many samples, just too much stuff to attempt to describe the sounds on an individual basis. I will, however, give you my impressions and opinions of the whole and pick out those sounds which lit me up. Sound is a very subjective area. What I like and find musically and sonically appealing, you may not. But, hey, most of us know what's good and bad.

Sonic Images, Volume 1

The disk contained five directories: drum sets, assorted percussion, pianos, instruments, and music FX. The drum sets 1-12 were all excellent. There is a wide variety to choose from and with a little EPS skill, it won't take long to create a custom kit tailored to your specific needs. Mixed in with the drums were Latin flavors and spacey hits. American Indian drums and war-path bells are richly sampled and mapped to one key with velocity sensitivity controlling the bells. In another kit reverse "Pole" hits and tympani made a nice mix with the other standard drums. Each kit offers a different mood and depending upon yours I'm sure these will all do.

The assorted percussion directory contains four different sets of percussion of every variety. Spinners, pops, cracks, snaps, gongs, and cymbals round out a very complete collection. If you can think of it, somewhere in the OMI library the sound probably exists.

Located in the pianos directory are the Klavins and Seiler Grands. These I found quite good, though less than perfect and, for their block sizes (over 3800 each) I felt that the Ensoniq Bosendorfer was a much nicer sounding instrument in the upper registers. The Klavins did sound a bit richer in the lower registers, so mix and match your samples and the results could be amazing.

The orchestral effects and orchestral strokes are amazing! If you score for film these are a must!! As you would expect, these particular sounds do have limited uses and are quite specialized but when you need just the right hit, these are it! I have never heard any samples more realistic and set up in just the right pitch. Music FX completes Sonic Images, volume 1 and contains 23 full effects sets. Bleeps, blurps, dings, doinks, bongs... you get the idea. Again highly specialized stuff but a life-saver when you need this kind of effect.

Sonic Images, Volume 2

All sorts of choirs and voicing along with other thickly layered synth stuff abounds here in grandiose style. I couldn't find a loop

click or a really bad sample in the lot. On this disk, the 48 string guitar melted me like a torch on ice. It is crisp and full and real. It's like four 12 string guitars in unison with 44k reverb providing the finishing touches. Other sounds like Pianosstrings, Microwave, Lush Strings, Harpsiflute, can nicely fill in your sound library.

Master Studio Collection, Volume 1

This is a brand new collection which has just become available. OMI has taken great care to make this an "everything" disk. The basics are here, piano, bass, Ovation guitar, brass, synths, SFX, percussion and more; but what really intrigued me about this disk was the New Age/Ethnic Directory which included the zither, the Tibetan bowl, and the sitar. One of my favorites is the bouzouki, with its plucked European and Asian flavor. It gets just a bit dirty as the key is hit harder giving it a realistic sound. While you have the Celtic harp loaded try changing the effect from the 44k reverb to the dual delays and tighten up the left/right timing. The results are extraordinary. The Master Studio Collection is a truly remarkable achievement.

Denny Jaeger Master Violin Library

Composer Denny Jaeger spent two years of his life and \$400,000 to create this masterpiece. Having heard all the hype surrounding this disk, I decided to hear it last. Since I don't play a violin I can't tell you the kind of work that's gone into creating this library. I do, however, know what the articulation and resulting sound should be. I also know the ranges and capacity of a violin and how it should sound, so while I'm no Mr. Perlman authority-wise, I will say that this library floored me!

There are five directories. In the Loud Violin Directory, there are few samples... 948 of them. No stone was left unturned. Mezzo piano, forte, and fortissimo make up the sustained volumes, forte and fortissimo make up the attack volumes, and there are two vibrato volumes which contain 16 of the 948 samples.

The remaining four directories contain loud low Violins, soft violins, soft low violins and performance banks. All the samples are in true stereo, and done in half-steps. There are both broad and tight tunings. The sonic differences are subtle but have the effect of hearing a smaller string section or a larger one. There is also the unique control over vibrato. By controlling the volume of special vibrato samples, you can gain a greater control over the emotion of the instrument and thus not have to rely on the wave modulation of the EPS. This slight difference in technique can make or break the realism. In this case, it works very well. Unfortunately, you end up with a very large block size. Trills, tremolos, pizzicati abound here, the single most complete violin library on earth! I am amazed.

The Trade-Offs

As you know, life is not perfect. CD-ROM is not cheap and will require deep pockets and a hardware commitment. If your PC has SCSI and you can utilize the CD-ROM drive for other information as well, then the justification for owning one is even greater. CD-ROM load time is significantly slower than hard drive, around 380 msec access time with a transfer rate of 150kb/sec. It's no speed demon. To quote OMI, "Most of these instruments are set up

as single instruments that will occupy most of the memory available. We found that the number of samples used is directly correlated to the beauty and usability of the instruments. The samples have been kept at 44k sample rate for maximum bandwidth and sonic quality." It is true, the OMI disks are sample memory hogs and they leave it up to you to reduce the instruments into a more usable state that suits your individual needs. If you live in the multi-track world and can lock up to SMPTE, there need be no fear of sample size.

The Bottom Line and Last Word

At first I felt frustrated not being able to dump eight instruments into the 16+ and go on my merry way. As I began exploring the disks more and more, I began to fall in love with the sonic quality and programming. The full use of the 16 PLUS is employed in all of the instruments and their patches. The use of pan and volume modulation and velocity parameters make the emotional expression very convincing and quite beautiful. I found myself thinking more about my music and how to broaden both the sonic spectrum and musical originality. As far as the cost of CD-ROM goes, I can't say for sure that the cost of a CD is directly related to the years off the sound designer's life but there's a correlation there somewhere.

OMI has gone to great lengths and spent big bucks to make samplers in general, and the EPS in particular, easy and fun machines to be with. Extensive product information is available along with the Denny Jaeger demo CD. And if you search around, you can find great buys on ROM drives. Just make sure you use a credit card for your purchase and make sure if it doesn't work, it can be returned with a full refund.

Just when some of us thought all the rules were carved in stone and out in the open, OMI has come along and not only broke the rules but changed the game. ■

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, 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
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

Ensoniq Drum Sounds For The EPS-16+

Tom Shear

For: EPS, EPS 16+.
Product: SL-1 Sound Library.
Price: \$39.95.
From: Ensoniq, 155 Great Valley Parkway, Malvern, PA 19355. (215) 647-3930.

"I don't want to work, I just want to bang on the drum all day."

— Todd Rundgren

Well, if you share this sentiment with Mr. Rundgren, then you'll eat up this 5-disk set from Ensoniq. SL-1 is the first of Ensoniq's series of disks made specifically for the EPS-16+. And I guess I don't have to tell you what that means...sounds so clear you can practically see them. Yes, there's no doubt that those extra bits really do make a huge difference in terms of sound quality. Even if you own an EPS Classic you can use make use of these, albeit with some loss of fidelity. Even with this loss, however, you'd be getting your hands on some of the best sounding drums for any sampler. So let's delve into this package and see what we have...

The disks come with a small manual describing just about everything you'll need to know to get these disks up and running no matter what your level of proficiency with the EPS. Each set is described very briefly in terms of what styles it was intended for and which snares sound best with which kicks, etc. I don't know that I agreed with many of the stylistic suggestions for the sounds and would've rather seen a map showing the location and names of all the wavesamples instead of the very general map they use for all the drum sets. The manual also gives effects information, size information, and details on what each of the patch selects do.

Disk 1, Hifi Kit 1, 1520 Blocks

This kit, like all the kits in this set, is comprised of several kicks and snares on the bottom, with toms and miscellaneous percussion at the top end. In the middle is a blank space where, through the old double-clicking layering trick, you may place the single set of cymbals that are used for all the drum sets. This kit has four very solid kicks, three of which are recorded with ambience. Four snares of increasing punch and distinctly different timbres are included along with one rim. The toms here, as with all of the set, are the best Ensoniq toms I have ever heard. Many of the toms on previous Ensoniq efforts, were really disappointing to me and seemed to lack a very realistic sound. Well, suffice it to say that this has been taken care of in this set. These are excellent, extremely realistic toms that are very playable. And at the very top is a nice tambourine and a basketball and stick hit sound which "can be interspersed with the kicks for a contemporary sound."

Disk 2, Hifi Kit 2, 1566 Blocks

Again, we have a useful selection of very punchy kicks, this time without the ambience, and some more extremely interesting snares. The snares in this collection really have an appeal to just about anybody as they consist of both acoustic-sounding and electronic sounding varieties and even some that seem to be a hybrid of both. No matter what your style, there's something here for you. Another rim variation follows the snares and towards the top we get two more excellent sets of toms: one ambient, and the other more natural sounding. This time the percussion is of the Latin variety and is made up of some cowbells, a shaker, a woodblock, and another tambourine. As with all the sounds, a short demo sequence demonstrates the sounds.

Disk 3, Hifi Kit 3, 1580 Blocks

This kit includes kicks of every variety from "normal" to more unusual sounds. I really like the way these sounds are processed. The fact that these sound great without any effects should make it appealing to those of you who'll be using the original EPS. We then go on to a healthy mix of acoustic and electronic snares with just about as much punch as you can probably handle. The toms here are the ambient type and the percussion consists of different conga hits, a shaker, ago-gos, and an "R-8 Indrum." As always, the sounds are impeccably recorded and will blow you away.

Disk 4, Small Kit 1, 2, & 3

These kits are more memory efficient for those of you who need a high quality drum kit, but can't spare the extra blocks. Despite the vast difference in size (they average out to about 500 blocks), these sounds are just as wonderful as the bigger kits. How they got away with it, I'm not sure, but as they say...why ask why? Among these kits you'll find the same great types of kick and snare sounds found in the other kits, brushed snares (which were conspicuously missing from the factory "Jazz Kit"), various timbale hits, and bongos.

Disk 5, Hifi Cymbal & 20V Cymbal

This disk contains the set of cymbals that are used with all of the kits. This is the type of sound that makes you glad to own a 16-bit sampler. As you might expect, they absolutely sparkle and sound great. The cymbals included are foot closed hi-hat, closed and open hi-hats, two ride variations including one played at the bell of the cymbal (bravo!), and several crash variations. My only complaint here is that I would've liked to have seen several different sets of cymbals. These are good, but it'd be nice to have a variety to chose from. The 20V Cymbal is the low-memory version of this set, but don't think that means

low-fidelity. These sounds are almost indistinguishable from their big brothers in terms of sound quality.

So here's the bottom line: if you're looking for contemporary rum sounds for your EPS, look no further. I couldn't find a single thing wrong with this set. The sound quality is CD-perfect, the patch selects are useful, and the sounds are all very unique. It seems like the good folks out at Malvern just keep

getting better. If they can top this (and somehow I have a feeling they will. They always do somehow...) I'll be mighty impressed. Synclavier? Bah...who needs one? ■

Bio: Tom Shear thinks that the Hacker's "somewhat regular" bevy of writers might want to try ex-lax or at least include more fiber in their diets. [Ed. - Tom is one of our irregular writers.]

The SD-1 Power Primer

Part One — An Intro

Tony Thomas

On the surface, the SD-1 looks like just about any other MIDI workstation. Buried beneath its front panel, however, you will find a sound creation powerhouse that can replicate just about any acoustic sound as well as any synth texture imaginable. It is this capability that separates the SD-1 from the rest of the workstation pack as far as I'm concerned.

While there are a slew of keyboards and modules on the market that can provide plenty of "oohs" and "ahhs" in the showroom, there are very few that are as "deep" as the SD-1 technologically. Unfortunately, in the neverending search for instant gratification, many would-be buyers pass the SD up for something a bit more trendy. If you're like me, you'd rather have your board be somewhat more substantial than the latest hip bass or orchestra hit. If that is the case, you probably own or are planning to buy an SD-1.

The Intimidation Factor

I remember the night I brought my SD-1 home. After noodling around on the keyboard a bit, I decided to try my hand at sequencing and programming. Since I also own a Mirage and ESQ-M, I didn't think that it would be difficult to figure out the SD-1. As I began to dig into its architecture, I began to realize just how powerful and complex an instrument it is.

After glancing at the manual, I saw that I would be spending quite a bit of time with my head buried between its pages learning about my newfound friend. It's very easy to become intimidated with an instrument as sophisticated as the SD-1. Don't be. Even though it is complex, if you will just be patient and take your time, you can unearth many of its hidden treasures.

Taking Control

One of the most powerful and useful features of the SD-1 is its versatile multi-controller interface. In addition to standard controllers like the pitch bend and modulation wheels, the SD-1 also offers exclusive patch select buttons which enable you to bring in different parts (actually oscillators) of a sound or change its character completely.

Once you learn how the patch select buttons work, you will be able to open up the true sonic potential of the instrument. Unfortunately, many people looking at the instrument for the first time fail to realize the implications those two little buttons can have on their playing. In their search for instant gratification, they overlook two of the most powerful weapons in the instrument's sonic arsenal.

With those two buttons, you can change a sustaining lead guitar sound, for example, into a "chunk" guitar in a split second. A legato string sound can be turned into a marcato or pizzicato sound and back again just as rapidly. When combined with the traditional mod and pitch bend wheels, these buttons can add a great deal of articulation and realism to your playing. The SD-1 also has performance parameters which can be adjusted in real-time during a performance. They can also be recorded into the sequencer as you play. These parameters include volume, pan, timbre, key zone, transpose, release, patch select, pressure and sustain.

Finally, the SD-1 has polyphonic key pressure — a feature found on very few keyboards — which enables you to add vibrato, for example, to a single note in a chord.

Steady as She Goes

Patience is not only a virtue — it is an outright necessity if you are going to unleash the power inherent in the SD-1. Take your time and understand that you are not going to learn everything about the instrument in one sitting. In future issues of the *Hacker*, we'll be here with articles to make the process less arduous. ■



Bio.: Tony Thomas is a veteran journalist who has contributed to several national magazines. An avid MIDI enthusiast, Tony is the former executive editor of The MIDI Insider. He is also an established recording engineer, producer and keyboard player.

Installing a Hard Drive in Your EPS-16 Plus

Daryl Daughters

Owning an EPS without a hard drive is like driving a Volkswagen instead of a Porsche. Both will get you where you want to go, but one is a lot more fun and a whole lot faster. Having an EPS with an external drive is like taking your mother-in-law along with you in your Porsche. You can still get there, but it's a little off. So the solution, then, is to mount a hard drive *inside* the EPS case. You only have one power cord and you're freed from the hassles of carrying floppy disks, the external drive, and SCSI cables to your gigs. The steps listed here work for installing a Quantum LPS 105 (Low Profile Series, 105 megabytes, 9 millisecond access time) hard drive in an EPS-16 Plus with an Ensoniq SCSI interface. Similar equipment may work, but other modifications may be required. The installation is not extremely difficult, but you need to be mechanically inclined and able to solder.

Step 1. Purchase the external disk drive, configured for a Macintosh computer. Be sure to get an external drive (we'll need the power supply mounted inside), and that the drive mechanism inside is not larger than 4 inches by 6 inches, or more than one inch thick. A larger drive will not fit. The best sources are mail-order houses with ads in the back of Macintosh magazines. You should be able to buy the drive for less than \$400.

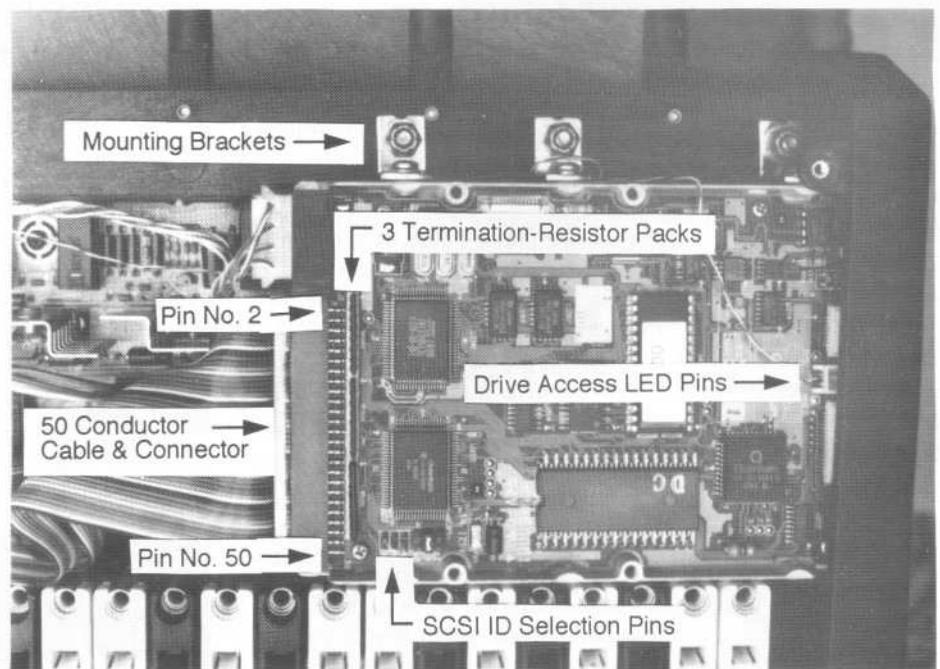
Step 2. Hook the drive up externally following Ensoniq's instructions included with the SCSI interface. Remember that the hard drive must be turned on several seconds before the keyboard is turned on. Use the drive heavily for several days to ensure that your drive is healthy and that your SCSI interface operates properly. If it doesn't work right externally, it won't work right internally.

Step 3. Open your external disk drive's case. With all electronic parts, static discharge is a major enemy. It's best to use a ground strap, but if you don't have one be sure to touch a bare metal part before you touch any electronic part. Also be careful not to slide around on your chair or do anything else that could generate static electricity. Examine the drive to ensure that the dimensions are not greater than those listed above. The power supply should not be bigger than about 3 inches by 5 1/2 inches by 1 1/2 inches thick. The drive will fit nicely behind the E6 to C7 keys and the power supply fits between the mod/pitch wheels and the floppy drive, but there is no way that the existing cables and connectors will fit

inside the EPS. The major effort in installing the drive will be to build new cables to replace the standard bulky SCSI cables.

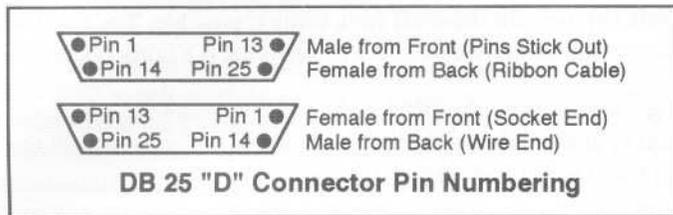
Step 4. Purchase a 50-pin dual in-line ribbon-cable connector exactly like the one on the drive (available at many electronic parts stores, but not Radio Shack), and DB-25 sub miniature male (Radio Shack #276-1547) and female (Radio Shack #276-1599) connectors. The male connector needs to be a solder type and the female a ribbon cable type. Also buy a plastic hood for the solder-type D connector (Radio Shack #276-1549) to prevent the connector from shorting to other parts. You will need about 6 inches of 50-conductor ribbon cable and about 12 inches of 25 or 26-conductor ribbon cable. Radio Shack sells 25-conductor ribbon cable (gray only) but not 50-conductor. The 25-conductor cable can be laid side-by-side to make 50-conductors, but you're better off if you can find some multi-colored cable as it's easier to keep the wires straight. Your total cost for these parts should be about \$15.

Step 5. Disconnect the 50-pin dual in-line connector from the drive mechanism. Leave the 50-pin large SCSI to 25-pin D connector cable connected to the drive, but be sure it is disconnected from your keyboard. Using a continuity tester, verify that your cable is wired like the cable in Table 1 (except for some possible variation in grounds) and that you thoroughly understand how the pins are numbered and which pin is number one. When you're ready, duplicate the function of the cabling between the 50-pin dual in-line disk drive connector and the male D connector by soldering the 50-conductor ribbon cable



Hard Drive Installation

to the 25-pin solder-type D connector. When you are done, check, and then re-check that your new cable is wired exactly like the original cable. Use your continuity tester and the old cables as a model.



Step 6. Since you now have a compact cable that will connect your drive mechanism directly to a 25-pin D connector, connect your drive to the back of your keyboard using your new cable. Power everything up like before and verify that everything works. It should, because the only difference between now and Step 2 is that you are using your new, compact cable, and you verified that electrically it is identical, right?

Step 7. Find your Ensoniq warranty and kiss it good-bye, because it's time to open up your keyboard. The hinged keyboard cover is fastened down with four 3/32-inch Allen screws. The floppy drive-mod/pitch wheel assembly is fastened from the bottom with four Phillips screws. Open your keyboard up and observe the area where the SCSI interface ribbon cable connects to the internal electronics with a small ribbon cable connector. Replace that ribbon cable with one about a foot longer that will continue inside the keyboard and end with the 25-pin DB-25 female connector you bought. To replace the ribbon cable the SCSI connector on the rear of the keyboard must be

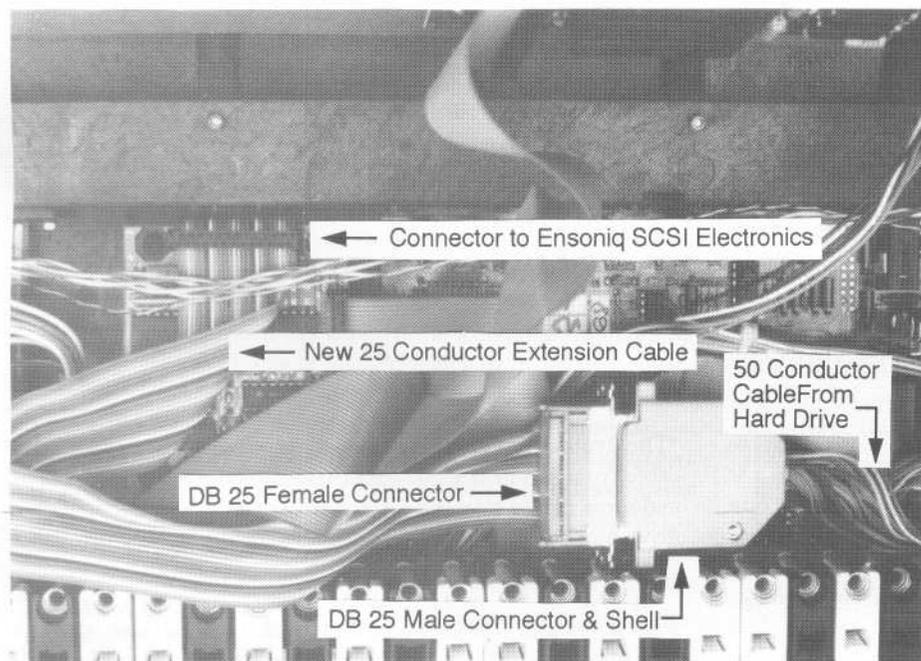
disassembled. The ribbon cable replacement requires no soldering, just be careful to observe static precautions. The Ensoniq connector to the electronics has 26 pins. The pin closest to the high end of the keyboard is not used. When you have added the new connector, verify that pin 1 on the new connector has continuity to pin 1 of the old connector to ensure that the new connector isn't connected backwards. Connect the drive to the new connector using your new cable. If there is any metal showing on the connectors, be sure to wrap it with something non-conducting. Once again power everything up and verify that everything works correctly.

Step 8. Mount the hard drive mechanism and power supply to the plastic case in a manner similar to the pictures. I used three 1/2 inch wide angle brackets to hold the drive in place, shortening the side of the bracket adjacent to the plastic case. For the drive I drilled holes completely through the plastic and hinge and used machine screws. For the power supply I used self tapping screws and did not drill completely through the plastic case. Be sure to use short (approximately 1/8th inch) standoffs between the power supply board and the case so that the board is not stressed when screwed down.

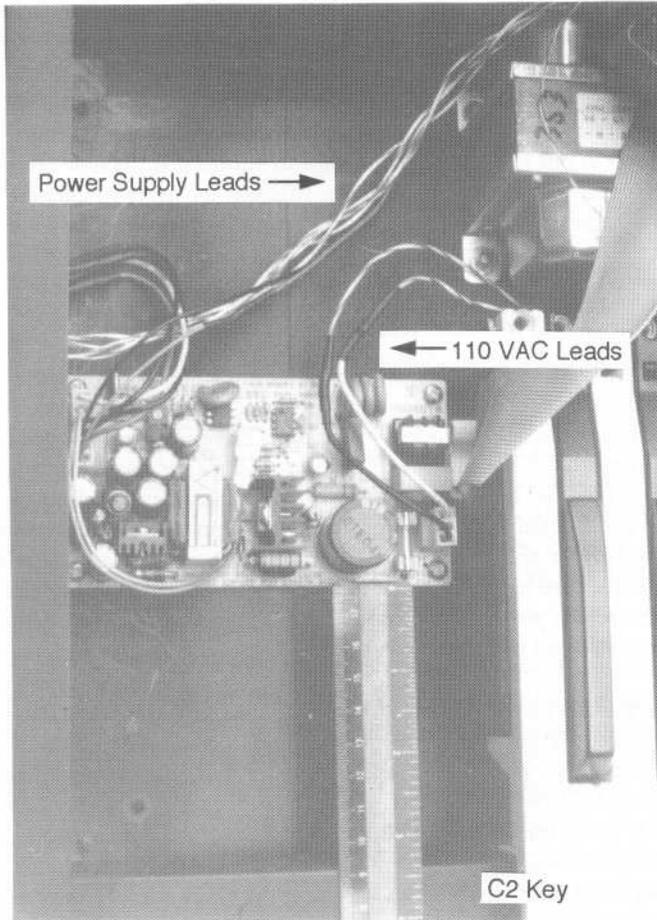
Step 9. Wire the power supply to the disk drive by either cutting the existing wires and splicing in extension wires, or buy an extension cable. Radio Shack sells a 10-inch extension (#278-767) for \$2.49. Several will be needed. Wire the 110 VAC leads for the power supply by splicing the white wire to the neutral lead coming from the Ensoniq 110 VAC receptacle (identified with an TNU) and splicing the black wire, through a SPST switch, to the black lead coming from the receptacle. Mount the SPST switch into the back of the keyboard near Ensoniq's switch. Choose a place where you would like to mount

LEDs (Light Emitting Diodes) to show when drive power is on and when the drive is being accessed. I chose to use extremely small LEDs (about 0.050 inch in diameter at the tip) and mounted them directly above the floppy drive, facing forward. Copy the wiring method that was used for the LEDs on the hard drive external case. If the LEDs are wired backwards, nothing will be damaged, they just won't light. Connect any disconnected cables and again power up your keyboard to ensure that everything still operates correctly.

Step 10. I didn't have room to use the existing SCSI ID selection cable and connector. If you know that you will need to repeatedly change the SCSI ID, you can make enough room for the connector by mounting the drive at a slight downward angle. I chose to select an ID, then measured which pins were connected, and then hard-wired them together. This also eliminated the neces-



New Cable Installation



Power Supply Installation

sity of mounting the ID switch. Go ahead and either hard-wire the pins or mount the switch. If you are going to connect a second drive to your keyboard using the connector on the rear, you should remove the termination resistors from this drive before you close the case. They are the 3 long, skinny things with 8 pins, plugged into sockets directly behind the 50-pin dual in-line connector. Note the direction that the resistor packs are installed in case you want to re-install them sometime. Installation is now complete and the keyboard can be closed back up. Turn your drive and keyboard on and let the drive run in this configuration, with the keyboard case closed, for at least half an hour, and then re-format the drive. Hard drives should always be formatted in a condition as close as possible to how they will be used.

Care and Use Notes:

(1) Mounting the hard drive as we have (hanging from one side) is adequate, but not up to Ensoniq's standards, so it's not an option we can expect them to offer. If they did want to add a hard drive option, I'd recommend reworking the floppy mounting and putting the hard drive under it.

(2) Quantum rates the drive at 6 g's force operating and 60 g's non-operating. This means that if your keyboard is subject to being bumped hard during use you should load the sounds and

then turn the drive off. The drive is rated for 20,000 on-off cycles, so it can take a fair amount of cycling, but don't overdo it.

(3) The drive generates a fair amount of heat, and if left on for hours can get warmer than desired. If the case above the drive feels hot, turn the drive off for a while if possible. The fan that came with the drive case could be used, but it's fairly noisy.

The combination of an EPS and hard drive make an instrument that is unbeatable. Add Ensoniq's macros and presets, and the power at your fingertips is immense.

Table 1: SCSI-Bus Pin Assignments

Disk Drive Pin #	Ensoniq Pin #	Function
2	8	Data Bit 0
4	21	Data Bit 1
6	22	Data Bit 2
8	10	Data Bit 3
10	23	Data Bit 4
12	11	Data Bit 5
14	12	Data Bit 6
16	13	Data Bit 7
18	20	Data Bit P
20	n/c	Ground
22	n/c	Ground
24	n/c	Ground
25	n/c	n/c
26	25	Term Pwr
28	n/c	Ground
30	n/c	Ground
32	17	ATN
34	n/c	Ground
36	6	BSY
38	5	ACK
40	4	RST
42	2	MSG
44	19	SEL
46	15	C/D
48	1	REQ
50	3	I/O
31,35,37	7	(Ground)*
39,41,43	9	(Ground)
1,3,5	14	(Ground)
7,9,11	16	(Ground)
13,15,17,21	18	(Ground)
45,47,49	24	(Ground)

*The ground connections shown are what were used on my cable from Wholesale 54. All of the ground pins are equivalent and some cables may use different pins. All odd-numbered disk drive pins are grounded at the drive, except pin 25 which is not connected (n/c). ■

Bio: When Daryl Daughters is not taking something apart to see how it works, he is designing missiles for General Dynamics in Rancho Cucamonga, California. He tinkers with his keyboard, but leaves the serious playing to his wife, who plays their EPS-16 Plus in a church band.

Creating Custom Drum Maps on the SQ-1, SQ-2, and the SQ-R

Brian Rost

It's only been about four years since Roland introduced the MT-32 synth module and set the precedent for including sampled drum kits as part of a synthesizer's standard trickbag. Ensoniq wasn't far behind, though, since the SQ-80 was released at about the same time and featured a small set of sampled drum waveforms. With the introduction of the SQ-1 family, Ensoniq has introduced a new dimension to creating drum sounds. The drum sound programming mode is tailored specifically for building drum kits, with the ability to create up to seventeen zones across the keyboard, each zone being a separate part of the kit.

The factory default drum kits are stored in ROM at patch locations 80-99. These twenty kits are mapped in a configuration which is also standard in the latest Ensoniq products, the SD-1 and EPS-16+. This offers the advantage of being able to call up any of the default kits for sequencing and not have to worry about where the drums are assigned, since the locations of the basic kit (kick, snare, toms, hi-hat and cymbals) is fixed across all the kits.

You aren't, however, restricted to using the factory mapping when building your own kits. The SQ-1 has the capability to act like a chameleon and emulate other drum machines. The applications are practically endless. Perhaps you need to be able to play back sequences written to work with a specific drum machine, or you want to layer the SQ-1 sounds with a drum machine to beef up its sounds. Let's take a look at how simple it is to harness this potential in your own music.

Until recently, it was rare to find two drum machines from different manufacturers which used compatible mappings of drum sounds to note numbers. The situation has begun to change, as the mapping used on Roland drum machines has become something of a defacto standard in the industry. The principle reason for this is that Roland was the first to standardize the mapping of drum sounds across all their products (at least since the days of the TR-505 drum machine). In fact, the recently adopted General MIDI standard has adopted the Roland drum mapping and assignment of drums to MIDI channel 10.

To see the SQ-1 drum maps, call up any of the factory kits at program 80-99 and press EDIT SOUND. Use the menu arrows to scroll to the WAVE bank and the key range/wave name page. Place the cursor under the current key number field in the upper left hand corner, and either use the up and down arrows to see which waves are assigned to which keys. If you go to the SYSTEM menu and set EDIT KEYRANGE to ON, you can also play notes on the keyboard to change the current key field. Look at a few different kits and you will see that the "bread and butter" sounds like the kicks, snares, toms and cymbals are located in the same zones in all the factory kits, while the "color"

sounds, like Latin percussion, vary in location from kit to kit.

Let's see just how easy it is to have the SQ-1 duplicate the map of another drum machine. The map of the Roland TR-505 is shown in the table. As you can see, it has some interesting characteristics: the kick drum is located at B below the lowest C of a 61-note keyboard (this means you can't play the kick drum from the keyboard of many synths) and only one key is assigned to each sound. The TR-505 has a simple array of sounds (16 in all) comprising a basic drum kit plus some Latin percussion and hand claps. It's easy enough to set up a custom kit on the SQ-1 to correspond to the TR-505 mapping (with 17 zones available, there is actually one zone left over).

Now let's look at the MT-32 mapping. Notice that it is a superset of the TR-505 map. In addition to having more sounds overall, notice that many sounds are assigned to multiple keys. This makes it easier to program flams and rolls, but has one drawback: sequences that take advantage of the multiple keys are not backward compatible with the TR-505. While the Ensoniq mapping has contiguous zones for each sound, the MT-32 map has non-contiguous zones. For instance, each pair of tom keys is separated by a cymbal key. If you check the note numbers, you'll see that the toms are all on white keys and the cymbals all on black keys. Since we have only 17 zones, the entire MT-32 map cannot be duplicated in a single kit.

One way to get around this is to use only the sounds needed for a particular song. For instance, it's possible to duplicate the map from note numbers 35 to 54 with 17 zones, but this means that the Latin percussion instruments appearing at higher note numbers cannot be used. However, if you can live without having both acoustic and electric snares, you can free up a zone. Going back to the TR-505 default of only one key for the toms frees up three more zones.

Before you start wondering why a *Hacker* article is spending so much time talking about Roland products, let's take a look at emulating an older Ensoniq synth. The last map shown in the table is from our old friend the SQ-80. It corresponds to the DRUMS 1 waveform. (DRUMS 2 and DRUMS 3 are nearly identical except that the space used by the log drums is used for additional toms in DRUMS 2 and vice versa for DRUMS 3). This map is a cinch to duplicate on the SQ-1, as only five zones are needed.

I suppose I could go on and on about specific drum maps, but I think by now you have the general idea. Before you start programming, you will want to define the drum map you want to create. The drum map is usually provided by the manufacturer somewhere in the manual. If you don't have a copy of the manual but have (or can borrow) the drum machine you are

trying to emulate, it's still easy to set up the drum map, as we are about to see.

Ensoniq has cleverly provided a simple way to set up the zones by simply playing the desired key on the SQ-1 keyboard (or tapping on the pad of the drum machine) to set the high and low notes of the zone. Remember that the EDIT KEYRANGES parameter must be set to ON for this to work.

To get started, select one of the ROM drum kits, go into the EDIT SOUND menu and select CLEAR KEY MAP in the WAVE bank. This maps all seventeen zones to note A0. Now we'll set up the first zone. Hit any key in the desired range and the display will show ??? (since the key is out of the current range unless you hit A0), the range A0:A0 and the drum wave assigned to the zone. Move the cursor under the A0 on the left and hit the lowest key of the desired range, then move the cursor over to the A0 on the right and hit the highest key of the desired range (if the range is but one key, just hit the same key twice). If you have access to a drum machine whose map you wish to duplicate, you can connect the drum machine's MIDI OUT to the SQ-1 MIDI IN and tap on the pads for the drum sounds you are interested in rather than strike keys on the SQ-1 keyboard. Now pick the drum wave you wish to use and set up the other programming parameters for your kit: pitch, filter, amplitude and effects.

One real advantage of using the SQ-1 as your drum machine is that you can create wildly different kits which share a common map. For example, you have the option of using either acoustic or electronic kits, backward drum sounds and so on. The factory provided the 20 default drum kits stored in ROM to give you a wide palette of drum sounds to draw from right out of the box. If you're obsessive about drums, you can fill the entire patch RAM with custom kits. In fact, with a RAM card plugged in you can have up to 240 of them!

The only serious limitation to the drum programming mode is that each kit cannot have more than 17 zones. If you really need more zones, there is a workaround to this which is easily done on the SQ-1 when using the on board sequencer. Build up two drum kits, with each kit having different sounds and non-overlapping key assignments (for example, one kit might duplicate the first half of the MT-32 drum map while the second kit duplicates the second half), then assign each kit its own track in the sequencer. This allows access to up to 34 drum sounds. If you add a third kit on a third track, you could have 51 sounds and so on.

The bad news, if you have an SQ-R or are driving the SQ-1 from an external sequencer, is that the drums can't be split across multiple tracks unless you are willing to sequence the drum parts on multiple MIDI channels. This is because presets don't allow more than one track on a single MIDI channel.

With more and more new synths adding drum programming features like the SQ-1, I suspect we may start seeing drum patches being sold by third-party developers, especially kits that duplicate the mappings of popular drum machines or adhere to the General MIDI standards. For those who have gotten used to the idea that the only way to get new drum sounds is to buy a new drum machine, the SQ-1 represents a new way of working. You can literally call up new drum kits anywhere you need them with just a program change. The end result is the best of both worlds: use one of the factory default kits if it does the job, or build up that perfect kit you've always lusted after. So retire your old drum machine, fire up the SQ-1 and get that groove going! ■

Table: Drum Maps

MIDI Note # /Name	Roland TR-505	Roland MT-32	SQ-80 DRUMS 1
35/B1	Bass Drum	Acoustic BD	Kick
36/C2		Acoustic BD	Kick
37/C#2	Rim shot	Rim shot	Kick
38/D2	Snare Drum	Acoustic SD	Kick
39/D#2	Handclap	Handclap	Kick
40/E2		Electric SD	Hi-hat
41/F2	Low Tom	Acou Low Tom	Hi-hat
42/F#2	Closed hi-hat	Closed hi-hat	Hi-hat
43/G2		Acou Low Tom	Hi-hat
44/G#2		Open hi-hat #2	Hi-hat
45/A2	Mid Tom	Acou Mid Tom	Hi-hat
46/A#2	Open hi-hat	Open hi-hat #1	Hi-hat
47/B2		Acou Mid Tom	Hi-hat
48/C3	High Tom	Acou High Tom	Snare
49/C#3	Crash cymbal	Crash cymbal	Snare
50/D3		Acou High Tom	Snare
51/D#3	Ride cymbal	Ride cymbal	Snare
52/E3			Snare
53/F3			Snare
54/F#3		Tambourine	Snare
55/G3			Snare
56/G#3		Cowbell	Snare
57/A3			Log Drum
58/A#3			Log Drum
59/B3			Log Drum
60/C4		High Bongo	Log Drum
61/C#4		Low Bongo	Log Drum
62/D4	High Conga	Mt High Conga	Log Drum
63/D#4	Low Conga	High Conga	Log Drum
64/E4		Low Conga	Log Drum
65/F4	Timbales	High Timbale	Tom Tom
66/F#4		Low Timbale	Tom Tom
67/G4	High Cowbell	High Agogo	Tom Tom
68/G#4	Low Cowbell	Low Agogo	Tom Tom
69/A4	(end of map)	Cabasa	Tom Tom
70/A#4		Maracas	Tom Tom
71/B4		Samba Whistle S	Tom Tom
72/C5		Samba Whistle L	Tom Tom
73/C#5		Quijada	Tom Tom
74/D5			Tom Tom
75/D#5		Claves	Tom Tom
76/E5		(end of map)	Tom Tom
77/F5			Tom Tom (continues upwards)

SD and VFX Default Envelopes Translated for the ESQ/SQ-80

Kirk Slinkard

Perhaps some of you are wondering, "What the heck is a VFX/SD default envelope?"

In fact, until just recently, I, my own self, didn't even realize they existed. Well anyway, they are a series of seventeen preset envelopes that can be called up on the copy page of the VFXs and the SDs. When an envelope is selected on a VFX or SD voice and then the copy page is called up, there is an extra parameter called "DEFAULT." This accesses several factory preset envelopes that are intended to make programming a little easier. Most of these are usable in various applications, but some are intended for just pitch, brightness, or volume.

So I thought that this would be a nifty opportunity to make use of certain conversion charts that appeared in a previous issue, and make a list of these envelopes that could be used for SQ-80s and ESQs. The SQs (except the SQ-80) have an equivalent that's accessible from their envelope pages. But of course, these synths have one less time and level in their envelopes. This makes them pretty much like the ESQ/SQ-80 except that the ESQ/SQ-80 envelopes have their first levels always stuck at a zero value. You could imagine this on the ESQ/SQ-80 envelope page as "L0" (level zero) just before "L1," and always having a value of zero. So, strictly speaking, the ESQ/SQ-80 envelopes do actually have four levels and times, sort of like the more recent SQs.

This would suggest copying the SQ versions of these envelopes, but when I tried that, I still ran into the same problems associated with the ESQ/SQ-80 first level always at zero. I found that by using the envelopes as a pitch modulator and doing direct A/B comparisons with my VFX-sd, I was able to get identical copies in most cases and the rest were extremely close, with three exceptions. Envelopes 11, 12, and 17 cannot be directly translated into ESQ/SQ-80 envelopes because they use the repeat feature that turns the envelope into an LFO, so below the main chart is a smaller chart that shows how to make an LFO do exactly what the envelope does on the VFX. Fortunately, these particular envelopes were given simple, common LFO functions that were easy to translate into ESQ/SQ-80 LFOs, except for the fact that the VFX/SD envelopes only go positive and the ESQ/SQ-80 LFOs go both positive and negative.

I should also point out that envelope 6 (PERCUSSION) has its "FINISH" parameter activated, which is the same as turning on the "CYCLE" parameter on the modes page.

So here are the VFX/SD default envelopes written in ESQese:

Envelope Conversions:

Envelope	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
1. FULL ON	63	63	63	00	00	00	23	23	17	00
2. ALL ZEROS	00	00	00	00	00	00	00	00	00	00
3. FULL VELRANGE	63	63	63	63	00	00	23	23	17	00
4. SLOW STRING	59	63	54	08	26	34	36	49	41	00
5. PIANO DECAY	63	48	00	12	00	00	38	63	29	18
6. PERCUSSION	63	33	00	16	00	00	50	23	00	00
7. RAMP UP	00	31	63	00	00	00	39	40	00	00
8. RAMP DOWN	63	31	00	00	00	00	39	40	00	00
9. SHORT BLIP	00	63	00	00	00	03	03	00	00	00
10. BRASS FILTER	63	24	63	15	07	20	35	37	10	09
11. REPEAT TRIANG *	--	--	--	--	--	--	--	--	--	--
12. REPEAT RAMP *	--	--	--	--	--	--	--	--	--	--
13. WIND PITCH	63	63	63	00	63	23	23	23	17	00
14. BASIC PAD	57	63	63	00	00	00	32	00	44	00
15. AMP BLIP	44	63	00	00	00	00	06	17	17	00
16. TRANSIENT	63	00	00	00	00	00	03	00	29	00
17. SLOW LFO *	--	--	--	--	--	--	--	--	--	--

* LFO Settings For Repeating Envelopes

Envelope	Freq.	Reset	Human	Wave	L1	Delay	L2	Mod
11. REPEAT TRIANG	25	ON	OFF	TRI	63	0	--	OFF
12. REPEAT RAMP	22	ON	OFF	SAW	63	0	--	OFF
17. SLOW LFO	07	ON	OFF	TRI	63	0	--	OFF

Obviously, some of these will be more useful than others. I don't think that anyone will need to refer to this chart to make an "ALL ZEROS" or "FULL ON" envelope. But for the sake of accuracy, I have included the entire set of the default envelopes here.

For the sake of trivia, I'll mention here that on my VFX-sd the only other default setting I found was for "ALL VOICE PARAMETERS" that modifies a voice and gives a basic string sound. If you are like me, you might find that some of these envelopes will help to inspire you to make new patches or improve old ones. Also, having this collection slightly reduces the advantages that the newer Ensoniqs have over the older ones. So happy enveloping, and I'll mod you later. ■

Correction to one of the tables in my article in Issue 73

I was using the envelope time conversion chart from July, 1991 (page 17) to translate envelopes for this article, and

came across a big chunk missing from the middle of the chart (8.60 seconds through 28.00 seconds) and had to refer to my old notes. So in case you want to use it, here is the missing chunk. ■

Bio: Kirk Slinkard hangs out near Denver and plays synth. His favorite color is ultraviolet. Author's picture:

o
* - I - *
/ \

Envelope Times			Envelope Times		
SQ-80	VFX-sd	SECONDS	SQ-80	VFX-sd	SECONDS
	74	8.60	60		14.48
56		9.12		82	15.00
	75	9.30		83	16.00
	76	9.90	61		16.25
	77	10.00		84	17.00
57		10.24		85	18.00
	78	11.00	63		20.48
58		11.49		87	21.00
	79	12.00		88	22.00
59		12.90		89	24.00
	80	13.00		90	26.00
	81	14.00		91	28.00

Classifieds

SAMPLES

ECCENTRIC SAMPLES (Mirage and EPS). Ethnic, Ancient Greek, Medieval instruments; Patch creations; Industrial Percussion & more. Mirage demo tape: \$3. EPS demo tapes (Vol. II or Vol. III): \$6 each. U.S. funds only. Demo tapes include disk list. For lists alone, send SASE to: NIGHTWIND Sound, 170 Mar Monte Ave., La Selva, CA 95076.

If you are interested in industrial music and want to trade samples, ideas, etc., then write to me, Bob Green, 860 Briar Hill Ln., Traverse City, MI 49684.

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MIRAGE SAMPLES. 57 new samples for \$30. Most are unusual. 5 disks, \$6 each (US funds). Demo \$3. SASE for free listing. Treehouse Sound, PO Box 18563, Boulder, CO 80308-8563.

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128 Greendale Cres., Kitchener, Ontario, Canada N2A 2R6.

Mirage samples: Plus moving wavesamples all over. 7 sounds in one bank, much more. Listings: \$1.00. Demo tape: \$6.00 (includes listings). Mr. Wavesample, 162 Maple Place, Keyport, NJ 07735. 908-264-3512. Make checks payable to Jack C. Loesch.

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EQUIPMENT

SD-1, Like Brand New: \$1600. **EPS Classic**, 4x memory, disks, manuals, 2.4 ROMs, 2.49 OS: \$1050. **Kawai K4**: \$590. **EPS 4x expander**: \$100. **2x expander**: \$40. Rick, (603) 885-0628.

Alesis model 1622 16-channel mixer for sale - extra power supply and gigi bag included - \$600. Original EPS w/ 2X expander and SCSI, \$1200. Roland D-110 sound module, \$400. Barcus Berry BBE 402 Sonic Maximizer, \$175. All in good condition with manuals, etc. 503-245-3752.

EPS-M excellent condition. EPS & Greysound floppies included. Call Swift: 1-800-678-3154.

Tascam M-3500 recording console, 24 x 8, excellent condition, studio use only, \$3800. Rocktron 320 dual channel compressor/leveler, \$60. Lots of studio and instrument cables, various lengths, 1/2 price (1/4" to 1/4", 1/4" to RCA, Send/Return, Snakes, etc.) 1-215-926-1620.

WANTED

Wanted: Prophet 600 for parts. Call 414-435-3336 after 3:30 CDT. Ask for Steve.

Wanted: Real PIPE ORGAN SOUNDS for SQ-1 Plus. Can use Commodore 64, Arthur G. Toby, 1378 44th Ave., San Francisco, CA 94122. Phone: 415-664-7746.

SOFTWARE

Midicaster is still available. The way-cool operating system that turns your Mirage into a very capable System Exclusive data librarian, a 20,000-note sequence player, a disk copier/formatter, and wave-draw synthesizer is still available for a limited time. For more information, or to order, contact Tim Martin, 1510 S 5th W, Missoula, MT 59801. Phone: 406-542-0280 And thank you for your support.

PATCHES/SOUNDS

FREE SOUNDS with expander orders, EPS/EPS-16+, VFX-sd/SD-1, SQ-1, SQ-2, ESQ/SQ-80. **EPS-16+ FLASHBANK** and Sequencer expansion available. Also expanders for AKAI, CASIO, ROLAND, PEAVEY, and YAMAHA. **EPS/EPS-16+ Vol. I Sampling Made Easy & Vol. II Advanced Sampling videos**: \$30 each or both for \$50. 100 Drum Patterns for EPS/EPS-16+, VFX-sd/SD-1, SR16/HR16: \$12. Best Prices. Wildwood Sounds, 4726 Pebble Creek Terr., Pensacola, FL 32526. Phone: (904) 944-6012, Tony, after 6 pm.

120 High-Quality SD-1 Sounds! Vol. 1 has: classic analog synths, keyboards, guitars, brass, strings, and others. Vol. 2 has: basses, Kurzweil, drums, atmospheric, and more. Send check for \$25 to: Eric Olsen, 6050 Adaway Ct., Grand Rapids, MI 49546.

80 new SQ-1 sounds from Mark Clifton. Past Hackerpatches plus a multitude of solid usable sounds. CV pedal required. Send \$95 for RAM card or send own card and \$15 to: Mark Clifton II, 11972 Homeguard Dr., Woodbridge, VA 22192.

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

NEW SQ-80 SOUNDS from the Hacker's Sam Mims! Soundset 4 takes full advantage of the SQ-80's unique waveforms, and brings "hidden waveforms" to the SQ-80 for the first time. Forty patches on disk, with 22-page booklet of programming notes and performance tips, \$17.95. Syntaur Productions, 11116 Aqua Vista #2, North Hollywood, CA 91602, (818) 769-4395.

INSTRUCTION

VFX-sd USERS... 113-minute complete and thorough owners manual on audio cassette. Includes disk of performance templates ready for playing or sequencing, plus Blues sequence. You play the leads as you experiment. Listen and learn its true powers while your hands operate the VFXsd's controls, step by step. Order shipped fast with \$14.95 check (includes P/H) from: Talking Owner's Manuals - VFX, 21405 Brookhurst #151, Huntington Beach, CA 92646. FAX: 714- 631-5695.

EPS/EPS16+ NAVIGATOR - Want all EPS Direct-Dial commands at your fingertips? How about command sequences (mini- tutorials) dealing with sampling, sound editing, effects, MIDI/Multitimbral use, sequencing, song construction, and more? **The Ultimate EPS Cheatsheet!** Super-condensed, logically organized

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

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SQ-80 Hackerpatch

SQ-80 Patch: ATAK 2

by Kirk Slinkard, Lakewood, CO

Oscillators 2 and 3 use the DIGIT 2 wave for a fretless bass sound. If you play harder, exponential velocity (VEL X) sends the frequency of OSC 2 way up, but since it is synched to the silent OSC 1, this changes the waveshape rather than the pitch. The mod wheel brings in a sawtooth "attack envelope" from LFO 3 that modulates OSC 1,

resulting in a slightly different effect on OSC 2. LFO 2 creates a vibrato on OSC 3 only, which can be made bizarre with the CV pedal. Exponential velocity is also set up to turn off OSC 3, via the negative modulation of ENV 3 on DCA 3, and to give some wild stereo motion via the NOISE waveform of LFO 1.

The Hack

This one is appropriately named. It's very aggressive, and almost reminds me of the VFX's transwaves. By using oscillator sync and lots of modulation, Kirk has created a patch that responds to key velocity with a vengeance. ATAK 2 works nicely layered with a smoother, more sustaining sound. If you want this patch itself to sustain, you'll have to go to the MODES page and turn CYC to OFF, but that changes the quality somewhat. What I liked best was simply cranking the filter resonance up full blast (to 31). For an even more aggressive sound, try changing one or more oscillators to the DIGIT 1 waveform.



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

SQ-80 PROG: ATAK 2								BY: Kirk Slinkard		
OSC	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH		
OSC 1	-2	11	30	DIGIT2	LFO3	-63	LFO3	-63		
OSC 2	-2	11	30	DIGIT2	ENV1	+63	ENV1	+63		
OSC 3	-1	0	2	DIGIT2	LFO2	+63	*OFF*	-		
DCA	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH				
DCA 1	63	ON	*OFF*	-	*OFF*	-				
DCA 2	55	ON	VELX	+15	*OFF*	-				
DCA 3	55	ON	ENV3	-63	ENV3	-63				
FILTER	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH			
FILTER	0	0	0	ENV2	+63	ENV2	+38			
DCA 4	FINAL VOL	PAN	PAN MOD	DEPTH						
DCA 4	63	8	LFO1	+63						
LFO	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD		
LFO 1	8	OFF	ON	NOISE	0	0	0	VELX		
LFO 2	21	OFF	ON	TRI	1	0	0	PEDAL		
LFO 3	8	ON	OFF	SAW	0	0	0	WHEEL		
ENV	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+63	+63	+63	63X	63	63	0	0	36	0
ENV 2	+63	+51	+37	17L	7	13	38	30	42	0
ENV 3	+63	+63	+63	63X	0	0	0	0	63R	0
ENV 4	+63	+63	+63	0L	0	0	0	0	36	0
MODES	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC		
MODES	ON	OFF	OFF	0	OFF	OFF	ON	ON		
SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY				
SPLIT/LAYER	OFF	-	OFF	-	OFF	-				

Hackerpatch is intended to be a place where patch vendors can show their wares and musicians can share their goodies and impress their friends. Patches designated "ESQ-1" will also work on the SQ-80. The reverse is not always true. Once something's published here, it's free for all. Please don't submit patches that you know to be minor tweaks on 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—our resident patch analyst. If you send in a patch, please include your phone number. Requests for particular patches are also very welcome.

SD & VFX Hackerpatch

SD & VFX Prog: BANG IT

By: Steve Munro, Guilderland Center, NY

NOTES: These are loud, raunchy, electronic keyboard sounds. Not for the squeamish!

THE HACK: Steve's description says it all — you probably won't be using BANG IT in a new age band or at your next wedding gig. But if you're into alternative rock or industrial music, these are some interesting sounds. I particularly like these sounds played as a single note, or as octaves, at the bottom range of the keyboard. You can tone these down a bit by substituting wave-

forms. For example, try replacing the SYNCHRO-X of Voice 6 with VOCAL-X for a more mellow *0 patch select. But then, why would you want to? Raunchy is the name of the game here, and that's exactly what BANG IT delivers.

- Sam Mims

WAVES	1	2	3	4	5	6
Wave	Flutedrum	Kagong	Doctor-X	Crunch-LP	Crunch-GT	Spectri-X
Wave Class	TunedPerc	TunedPerc	Transwave	String	String	Transwave
Delay	0	0	0	0	0	0
Start	0	0	0	0	0	0
Mod Src	-	-	Env1	-	-	Env1
Mod Amt	-	-	+54	-	-	+99
Direction	Forward	Forward	-	Forward	Forward	-

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

PITCH	1	2	3	4	5	6
Octave	-1	+1	+1	0	0	0
Semitone	0	0	0	0	0	0
Fine	0	0	-06	0	-04	+04
Pitch Table	System	System	System	System	System	System

PITCH MODS	1	2	3	4	5	6
MODSRC	Off	Off	Off	Off	Off	Off
MODAMT	0	0	0	0	0	0
Glide	None	None	Legato	None	None	None
ENV1	0	0	0	0	0	0
LFO1	+04	+04	+05	+04	+04	+05

FILTER 1	1	2	3	4	5	6
Mode	LP/2	LP/2	LP/2	LP/2	LP/2	LP/2
Cutoff	127	127	127	127	127	127
KBD	0	0	+25	0	0	+25
MODSRC	Off	Off	Wheel	Off	Off	Wheel
MODAMT	0	0	-40	0	0	-40
ENV2	0	0	0	0	0	0

FILTER 2	1	2	3	4	5	6
Mode	LP/2	LP/2	HP/2	LP/2	LP/2	HP/2
Cutoff	127	127	0	127	127	0
KBD	0	0	0	0	0	0
MODSRC	Off	Off	Wheel	Off	Off	Wheel
MODAMT	0	0	+40	0	0	+40
ENV2	0	0	0	0	0	0

OUTPUT	1	2	3	4	5	6
VOL	90	90	88	88	88	99
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	-	-	-	-	-	-
Dest Bus	FX1	FX1	FX2	FX1	FX1	FX2
Pan	40	60	50	60	60	50
MODSRC	Noise	Noise	Off	Noise	Noise	Off
MODAMT	-20	+20	0	+20	+20	0
Pre-Gain	On	On	On	On	On	Off
Voice Prior	Med	Med	Med	Med	Med	Med
Vel Thresh	-	-	-	-	-	-

LFO	1	2	3	4	5	6
Rate	25	26	30	28	28	30
MODSRC	Press	Press	Press	Press	Press	Press
MODAMT	+15	+10	+10	+14	+14	+10
Level	0	0	0	0	0	0
MODSRC	Press	Press	Press	Press	Press	Press
Delay	0	0	0	0	0	0
Waveshape	Triangle	Triangle	Triangle	Triangle	Triangle	Triangle
Restart	Off	Off	Off	Off	Off	Off
Noise SRC RT	0	0	0	0	0	0

SELECT VOICE

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

ENV1

	1	2	3	4	5	6
Initial			0			99
Peak			99			80
Break 1			0			60
Break 2			99			40
Sustain			0			84
Attack			35			0
Decay 1			35			30
Decay 2			50			30
Decay 3			35			30
Release			50			00*
KBD Track			0			+28
Vel Curve			Cvx-2			Cvx-1
Mode			Repeat			Repeat
Vel-Level			0			18
Vel-Attack			0			0

ENV2

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

ENV3

	1	2	3	4	5	6
Initial	99	99	72	99	99	72
Peak	99	99	99	92	99	99
Break 1	75	82	99	86	82	99
Break 2	56	85	99	88	85	99
Sustain	0	90	99	92	90	99
Attack	0	0	20	0	0	20
Decay 1	45	40	20	40	40	20
Decay 2	52	40	20	40	40	20
Decay 3	70	40	20	40	40	20
Release	30	30	10	30	30	10
KBD Track	+28	+28	0	+28	+28	0
Vel Curve	Cvx-1	Cvx-1	Cvx-1	Cvx-1	Cvx-1	Cvx-1
Mode	Norm	Norm	Norm	Norm	Norm	Norm
Vel-Level	18	18	0	18	18	0
Vel-Attack	0	0	20	0	0	20

PGM CONTROL

Pitch Table	Off
Bend Range	02
Delay	1
Restrike	25
Glide Time	09

EFFECTS (1)

Effect	Fing+Dly+rev2
Decay	60
FX1	30
FX2	50

EFFECTS (2)

Flanger Rate	50
Min	050
Max	100
Feedback	-75

EFFECTS (3)

Decay Time	110
Regen	0
Mix	30
HF Cut	Off

PERFORMANCE

Timbre	0
Release	0
Pressure	Key

Prog: QUEST 02

By: Walter Cooper, Latter Sound Productions

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	String	Transwave	Waveform
Wave	StringEns	For-X	Bubba
Delay Time	000	002	000
Wave Direction	For	For	-
Start Index	00	00	00
MODSCR	Vel	LFO	LFO
MODAMT	00	+03	00
Restrk Decay	18	18	18

PITCH	1	2	3
Octave	+1	+1	-1
Semitone	00	00	00
Fine	00	+09	00
ENV1	00	00	00
LFO	00	00	00
MODSCR	LFO	LFO	LFO
MODAMT	00	00	00
KBD Ptch Track	On	On	On
Glide	Off	Off	Off
Glide Time	-	-	-

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

LFO	1	2	3
LFO Speed	17	17	20
Noise Rate	00	00	00
Level	43	43	99
Delay	00	00	00
MODSRC	Wheel	Wheel	Press
Wave	Tri	Tri	Tri
Restart	Off	Off	Off

FILTER	1	2	3
Filter 1	3Lo	3Lo	3Lo
Filter 2	1Hi	1Hi	1Hi
FC1 Cutoff	077	077	058
ENV 2	00	00	+11
FC1 KBD	00	00	00
MODSCR	Vel	Vel	Press
MODAMT	+53	+53	+92
FC2 Cutoff	000	000	000
ENV2	00	00	00
FC2 KBD	00	00	00
FC1MOD-FC2	On	On	On

ENV2	1	2	3
Initial			00
Peak			99
Break			85
Sustain			27
Attack			47
Decay 1			44
Decay 2			35
Release			48
Vel-Level			46
Vel-Attack			00
Vel Curve			Convx
Mode			NOR
KBD Track			00

AMP	1	2	3
Initial	99	99	79
Peak	77	77	99
Break	59	59	88
Sustain	83	83	87
Attack	39	39	35
Decay 1	37	37	56
Decay 2	47	47	33
Release	48	48	50
Vel-Level	26	26	13
Vel-Attack	00	00	00
Vel Curve	Convx	Convx	Convx
Mode	NOR	NOR	NOR
KBD Track	00	00	00

OUTPUT	1	2	3
VOL	72	72	79
Boost	Off	Off	Off
MODSRC	LFO	LFO	LFO
MODAMT	00	00	00
KBD Scale	00	00	00
Key Range	-	-	-
Output Bus	FX2	FX2	FX1
Priority	Med	Med	Med
Pan	-98	+98	00
Vel window	000	000	000

**Standard
Sound
Programming**

Effects Programming

(To save space, only those effects utilized are listed. A complete blank form was published in Issue #68.)

CHORUS AND REVERB

FX-1	50
FX-2	50
Decay time	64
HF Damping	00
Chorus Rate	20
Chorus Depth	19
Chorus Center	65
Feedback	00
Chorus Level	53
MOD (Dest)	Feedback
BY (MODSRC)	Modwheel
MODAMT	+77

The Hack: Quest 02 is a nice pad for the space-minded composer. That is, it will do very well as the backdrop for some serious galaxy hopping. This patch doesn't just settle for subtle either. It's rather a nice update on those B movie spacescapes so popular in the '60s and early '70s. Also Quest 02 isn't shy about being a little cheezy courtesy of the Formant-X wave used in Voice 2. But Voice 2 may be a bit too sharp, thus over-shadowing the nice bed provided by Voices 1 and 3. For Voice 2, in the filter section, adjust (FC1) ENV 2 to -20. For Voices 1 and 3, in the output section bring VOL up to 90 and 95 respectively. This may help to balance the patch some. (If you're into balance.)

Jeffrey Rhoads



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

SQ-1 & 2 Hackerpatches are published with the same constraints and understandings as the ESQ, SQ-80, and VFX patches. The hacking and mutilating part is being handled by Jeffrey Rhoads.

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, PAN: TRANSONIQ, 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 Hacker,

I am using the EPS-16+ with a hard disk drive and would like some information about loading samples with MIDI program changes sent from an external sequencer.

When the EPS receives a program change it will only load a sample from disk to an instrument that already has a sample loaded. Is there a way to have a program change load a sample to an empty instrument? I know it is possible to make an empty instrument and manually load that first. The problem is that I have a 30 minute sequenced video score that loads lots of sounds. The piece uses the EPS to do a real-time automated mix. If one scene has a full set of instruments when the next set of instruments loads, one very large instrument can delete all other existing instruments, disabling subsequent loads via MIDI.

The best solution to hard disk loading would be to have a program change load a bank. Is there any way to do this? I have a copy of the EPS External Command Specification. Is there a way to load banks via SysEx?

Finally, will the next release of the OS make hard drive instrument loads via program changes coming from a computer sequencer easier?

Any readers with comments can contact me via the Internet: "nleonard@rcnvms.rcn.mass.edu"

Thank you,
Neil Leonard
Jamaica Plain, MA

[CS - You are correct that there is currently no way to load an instrument via program change command into an empty instrument/track location.

I'm not positive, but I believe that Ensoniq is working on adding a "bank load via program change" command to the next OS release - perhaps they'll have something to say on the subject.

[Ensoniq - We recognize the advantages of loading a Bank via MIDI and have implemented it in O.S. version 1.20, which is currently in Beta test. It is working fine, and we

expect to release it in a few weeks.]

Dear TH, CS & Hackers...

I finally put my foot in it. In TH #80, I had a letter published in this forum in which I was (and still am) jumping up and down about TH not being placed in the box with new Ensoniq gear. In that letter I rather savagely (and on reflection unfairly) attack the "after-sales service and the distribution network" in Australia. In my panic after learning of TH's plight I was trying to contrast TH, which provides advanced user support, with the normal links we have with Ensoniq... "the distribution network."

TH is efficient and most importantly correct in the information it provides, while on the other hand this same info may take some time (months) to turn up at your local music store here in Australia. Some of it, like "How to Get Your EPS to Make Coffee" may never turn up given that it is an esoteric function that some "hacker" has coaxed the EPS into doing with wild and creative OS hacking - an article in the true pioneering spirit of TH, making the blood race and the mind boggle.

As is the case with all Ensoniq users outside the US, an Australian Ensoniq user is in the position where an importer deals with Ensoniq USA who in turn deals with the local "Music Store" who then deals with the "user." As can be seen, this setup removes the user in time and place from the action at Ensoniq in the US. John McCubbery (the man to speak to in Australia for Ensoniq info) of the Electric Factory (Australian importers for Ensoniq) has always been more than helpful and fully competent when handling my Ensoniq related questions and requests for help. However, how can John be expected to tell me how to coax my EPS-16 Plus to make coffee or where to find the 3rd party OS system that does it unless he read it in TH?...that's why TH is ESSENTIAL.

Regards,
Scott Fisher [scott@wapsy.uwa.oz.au]
Department of Psychology
University of Western Australia.

[CS - Thanks for the kind words. At the risk of idling your blood and un-boggling your mind, though, TH is not always correct. See

related "Errata" in this issue.]

[Ensoniq - We should add that John McCubbery (like all of our distributors) faxes and phones us on an almost daily basis, and can get technical help and information much faster than reading it in the Hacker. He remains in the center of all our activities and we strive to support him as fully as possible. Of course you are right, it is only in the Hacker that we all learn how to get our Ensoniq gear to make coffee!]

[TH - And, we got a note from John McCubbery his own self in which he asks us to mention that people in Australia should feel free to call the Electric Factory direct (03-4805988) with their questions and problems - just as U.S. customers would call Ensoniq Customer Service.]

Dear Clark:

I recently bought the SC-5 sound card for my Ensoniq SQ-1. This is the first sound card I have purchased (after owning the synth for a year). I made my decision after spending lots of time listening to the various choices, including the new cards from Soundsource.

Let me begin by saying the sounds you and your partner developed for this card are absolutely awesome. I recorded multiple new sketches for song ideas just cycling through the sounds. I had no idea my synth could make these noises! Major kudos to the pair of you.

Just to let you know how impressed I was, I decided not to buy a second synth (I was thinking of one of the Korg O1 series) - having your card is as good as having an entire new module, for a fraction of the cost.

All that said, I have two technical questions for you. First, when I call up one of your piano patches ("Piano Pad," for example), instead of getting the straight-ahead pianos sound described in the manual, I get a weird assortment of beeps and special FX that are cool in their own right, but definitely not what I was expecting. I'm playing these sounds on a regular SQ-1 running OS 1.01. When I played the card on an SQ-2 in the store, they sound fine. Given that Ensoniq changed the piano in the SQ-2, I'm wonder-



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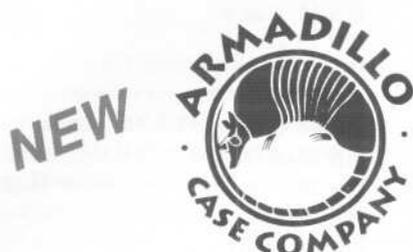
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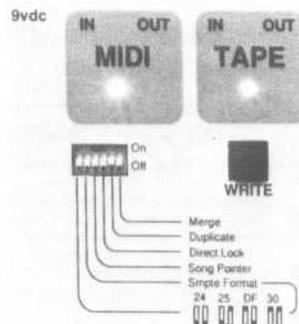
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ing if therein lies the problem. Any ideas as to what's going on and how I might fix it?

The second question is less urgent, but I'm curious. A lot of your written blurbs for the sounds claim that various things (filters, mix, tuning) will be modulated by the mod wheel. On many of the patches, I cannot detect the described effect, even listening as attentively as possible. The behavior is inconsistent: lots of the patches are modulated as advertised (more reverb, vibrato, etc.) but lots of the patches do nothing when I turn the wheel. Any thoughts? I haven't had time to check the programming and confirm that the mod wheel is indeed modulating the things described in the blurbs.

Again, thanks for some wonderful sounds (bagpipes, African days and nights, rez sweep!!!).

By the way, I really like your column in the Hacker. You're a great resource.

Sincerely,
Michael Harvey
Woodinville, WA

[CS - Both the anomalies you describe are related to differences between the SQ-1 and

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the SQ1-PLUS/SQ2. You are correct in your first assumption: The reason that your piano-based sounds sound more like a video game than a piano is simply because the SQ-1 does not have the new piano waves contained in the SQ-2. You may be able to reach an approximation of the correct sound, though, by checking the "Wave" page for each of the voices in any wayward program. Try setting any wrong-sounding voices to one of the piano waves that you do have, and if the program sounds good, save it.

As to the mystery of the ineffectual mod wheel, this also has to do with changes made to the SQ1-PLUS/SQ2. In these instruments, an additional modulation parameter has been added to the already crowded list of modulators - namely "Wheel & Pressure." This modulator takes its place in the modulator list that is occupied by the "Wheel" parameter in the original SQ. This was done so that any sounds programmed for the original SQ would respond in some way to key pressure. However, it was decided to retain the "Wheel" modulator as a separate modulator also - this so that programmers would not be forced into using pressure to modulate the same thing as the wheel, if they wished not to. The "Wheel" modulator was then moved one up in the modulator list, occupying the same slot as is occupied by the "XTRL" modulator in the original SQs. If you check the modulator for any programs that are not performing as advertised, I'll bet that you'll find the modulator is set the "XTRL." Decreasing the value of this parameter by one click will reset it to "Wheel," and you should find yourself back in the modulation mainstream.]

Dear Transoniq Hacker,

Is the following what it seems to be, a SCSI terminator? I don't know if it really is, so I offer it here to get the opinion of The Experts. The tip is extracted from the article, "AMSCSI" by Rich Frantz on the #66 Fred Fish Amiga PD Library. The pin assignments are from the Commodore Amiga A-590 Hard Drive manual.

Terminating a SCSI Bus:

"The SCSI bus should be terminated with 220-ohm / 330-ohm resistors. Every SCSI signal line should have a 220-ohm resistor to +5V, and a 330-ohm resistor to ground. You might want to try it without the terminators, but leave room for them just to be safe..."

The SCSI signals referred to are the data lines 0 to 7.

SCSI Pin Assignments:

PIN 1 REQ
PIN 2 MSG
PIN 3 I/O
PIN 4 RST
PIN 5 ACK
PIN 6 BSY
PIN 7 Ground
PIN 8 Data 0
PIN 9 Ground
PIN 10 Data 3
PIN 11 Data 5
PIN 12 Data 6
PIN 13 Data 7
PIN 14 Ground
PIN 15 C/D
PIN 16 Ground
PIN 17 ATN
PIN 18 Ground
PIN 19 SEL
PIN 20 Parity
PIN 21 Data 1
PIN 22 Data 2
PIN 23 Data 4
PIN 24 Ground
PIN 25 Termination Power (+5V)

And, does anybody know if a Seagate ST-157N family SCSI hard drive works on the EPS-16+?

Gabriel Diaz
Barcelona, Spain

[CS - Thanks for the input. Not being a technician, I can't authenticate the circuit or pinout you describe, so if something blows up, don't sue me. Or the Hacker. At least, not until after payday.]

As far as your Seagate drive issue goes, we've had mixed reports. One user claims to have had success using the Seagate 80M, but word has it that Seagate has made changes to their drive mechanisms which might present problems. The best advice from here is to try before you buy.]

[Ensoniq - There are numerous terminator devices available for the Macintosh. In addition, the SP-2 SCSI board has sockets on the circuit board for the terminator resistor packs so they can be installed or removed based on your particular system. In all cases, the terminator packs should be powered by the SCSI drive, not the EPS power supply.]

Dear Hacker,

Last September I purchased an SQ-2 and was extremely pleased after only a few hours of playing this powerful machine. I believe, though, that my machine has developed a problem – or possibly I just started noticing it.

Sometimes when I am in a situation where the display is flashing a data value that is editable through the data entry slider, the flashing number will change randomly, without warning. This most commonly occurs with Tempo when playing a sequence, or Song Tempo Offset when playing a song. In a live playing situation, this can be disastrous!

One solution that I have found is to move the slider to the very top or the very bottom, and then adjust the data value using the arrow keys. This is time consuming and irritating. Does my machine need repair? Is this a common bug? Am I missing some valuable information?

Appreciating all of your help,
Mark W. Balthrop
Seminole, Oklahoma

[CS – Best guess is that you have a problem with the slider itself. This should be easy and painless for your local service center to remedy, or contact Ensoniq Customer Service at (215) 647-3930.]

[Ensoniq – We are aware of this situation, which can be caused by excessive vibrations to your unit or even a temperature/humidity based change which causes the slider to be slightly "nudged." You don't say whether you're on stage, or what type of stand you use at home etc., all factors that can exacerbate this situation.

Your solution is a fine work-around. Another suggestion would be to leave it on a page that doesn't have such a critical value displayed. If you are concerned, please contact our Customer Service to be sure that your situation is adequately explored. We want to be sure we help you to our fullest capabilities, which can't be done in this letter.]

Dear Hacker,

I was intrigued by Charles R. Fischer's idea regarding the addition of an audio input to an older version Ensoniq board, published in the *Interface* section of Issue #78. I'm not an electrician and would not, therefore, attempt the addition myself, but I have some capable friends. I would like to know

if such an addition would be feasible for an SD-1 (32) and what the implications and possibilities of such an addition would be.

I would also like to express my desire to see a "pre-quantization mode" added to the sequencing mechanism of the SD-1. I learned to sequence drum patterns on an HR-16, which quantizes as you go. Not being a drummer, this made things very easy, since I could manipulate the quantization variables to make up for my lack of timing. With the SD-1, I must "post-quantize" my drum pattern attempts and hope that the notes fall into the correct spots. Sometimes this trial and error can take a while.

The installation of a high density disk drive would also be a nice addition to the SD.

Last but not least, I was wondering how long Ensoniq plans to continue its policy of upgrading VFX/SD boards every time a new technological advance is achieved? Sooner or later, I suppose, it will release an entirely new board, replacing all SD's and leaving old SD owners in the obsolete past with no recourse for catching up besides purchasing the new board. I realize that economy is the basis for everything and that Ensoniq must at least find its upgrading policy profitable. I can only hope that it continues to be so, since every technological advance offers something or other that Ensoniq zombies like myself can barely refuse, and often barely afford.

Sincerely,
Gary Hammell
Ottawa, Ontario

[TH – It's not really clear whether your last paragraph is a complaint or a compliment. Do you like the fact that an upgrade path is available, or just wish there were some "other way" that instruments could avoid becoming obsolete? In any case, we suspect that Ensoniq's upgrade policy is only "profitable" in the sense that it gives customers (and potential customers) another reason to buy Ensoniq. Things like upgrades, while certainly more fun than say, warranty repairs, are seldom "cash cows."]

[CS – I'm not quite sure what you would expect an audio input to your SD-1 to do, but I can only imagine that the results of attempting to add such a thing will land you somewhere between voiding your warranty and wondering how much you're going to need to spend for a replacement main board. I guess what I'm saying is I don't recommend monkeying around with expen-

sive hardware in that way. Pre-quantization and high-density drives are cool things to wish for, though.]

[Ensoniq – No, it is not possible to add an analog audio input to your SD-1 32 Voice, as it uses all-digital sound generating technology. Without any analog filters or amplifier circuitry (like the Mirage and ESQ-1 had) it simply can't be done.

There is no difference in the final results from pre-quantizing and post-quantizing, only the steps that you take to achieve the result. You would only save a few key strokes, but would lose our audition function, which is highly regarded. And then we would have to offer a choice of pre-quantization on or off, which would increase the number of keystrokes for many other users. Rest assured that your results are entirely the same, just choose your most common quantization (16th notes or perhaps a newer swing value) and trust your ears.

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Dear TH,

In regards to Garth Hjelte's "GO TO" inquiry (TH #81) — Ensoniq is wrong. My EPS will not work on GO TO as they described. So I experimented and here is the answer. When you have GO TO BAR ____, then hit ENTER — YES. Now you can hit Stop/Continue and Record.

Ensoniq — come on, let's have the O.S. 2.5.

P.S. Garth — I have several of your Rubber Chicken sounds and they are great!

The old piano man,
Jim McDonald
Fayetteville, AR

[*Ensoniq — Yes, dropping a word as small*

as ENTER from a word-processed document does make a difference. Of course you have to hit ENTER, which is what we were doing here. Sorry for any inconvenience it may have caused you.]

Questions for your magazine:

1. On the EPS-16+, how do I increase the length of a note that is part of a chord? There is an editing page for changing notes, but the manual says you can also change the length of a note.

2. Is there any way of getting information on the Instruments that are supplied with the EPS-16+ — such as what instrument was used and what the patches for that instrument do, etc?

3. A useful addition to the operating system would be "note step entry" so that drum beats can be programmed in exactly how you want them played and not have to enter them in real time. Another useful addition would be to have the Disk Label increment in number each time you formatted a disk.

Yours faithfully,
Brian Clark



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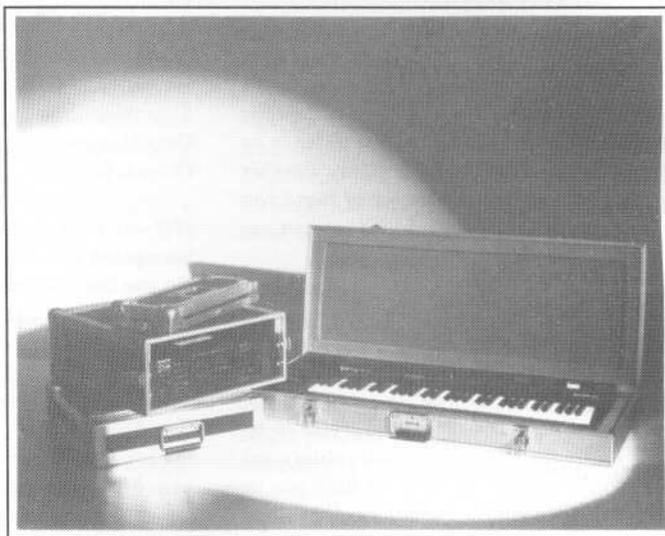
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[CS - 1) To change the duration of a single note (whether it is part of a chord or not), move to the event editing page, and scroll to the note in question. Once it has been located, scroll to the right. When the cursor is scrolled past the far right side of the event editing screen it will move to the next screen, which is dedicated to editing note and key pressure durations (note that this screen can not be accessed unless one of these types of events is currently selected).

2) You can get the manual for the sounds that were originally included with your EPS 16PLUS by sending in your warranty card - highly recommended if you haven't already done so. Or contact Ensoniq Customer Service at (215) 647-3930.

3) I like the idea of having step entry available, but I'm not wild about the thought of having the disk label automatically increment every time a disk is formatted. When I care about the ID for a floppy disk, I'm more likely to assign it an ID that links it somehow as part of an organized series of similar disks. Having disks numbered sequentially would mean that you'd end up with the disk IDs having no relationship to

each other, apart from showing you the chronological order in which the disks were formatted originally.]

Dear TH,

Let me start at the end. Sadly, as my subscription is coming up for renewal I shall not know if my letter is published or not. However, I would like to take the opportunity to say how much I have enjoyed TH and how much it has helped me to get the most out of my Ensoniq equipment. Unfortunately, I have had to sell all my Ensoniq gear due to the recession here and hence discontinue my subscription - I don't want to be reminded of what I am missing! Hopefully, I shall return to the enlightened fold in better times.

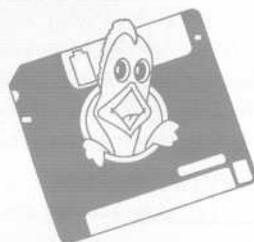
Like Scott Fisher (Issue #80, Feb. '92) I received my first copy along with the purchase of Ensoniq equipment and subscribed immediately. And like him, I think the decision to discontinue its inclusion is a mistake, as a flyer would not have persuaded me to subscribe as easily as reading TH itself. However, I can see a problem as far as dealers are concerned - which may be behind the decision. The magazine im-



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Thanks again to all your contributors – keep up the good work until I can afford to buy another keyboard and subscribe once more.

Regards,
Martin Waugh
Edinburgh, Scotland

[TH – Sorry to hear about the effects of the recession.

Your suggestion about the sample issue is a good one – and one which we considered quite a bit when going through this latest change. There are, however, several trade-offs with this. The print run that we'd have to do with such an issue would make ad rates such that most of our "garage shop" type entrepreneurs would be priced out. The long length of time that the ad would be running would tend toward ad info getting out of date. And, to the extent that advertisers see this as an alternative to advertising in our monthly issues, this would make our monthly issues less viable. The problem with the new subscribers can be described as "too much of a good thing" – this "best of" issue would not really be indicative of what they could actually expect. We don't know about you, but we always feel a little suspicious about best-of "sample" issues. In our own little low-key approach to marketing we always felt better giving them an actual issue. But the real killer with the idea is the expense. Printing such a beast (especially when compared to the flyer) is really prohibitive.

At this point, the flyer seems to be working and still provides a way for our current advertisers to get their name, address, and brief product description to the new instrument purchasers. We've also added a little 3-month "Skeptic's Sub" option so people can see what they're getting. Of course, things can always be counted on to change, and the sample issue idea may at some point be the best way to go.

In any case, we suppose sending you a copy of this issue so you can see your letter in print isn't going to break us.]

Dear TH:

Mega-dittos, excellent mag, etc.

I have an ESQ-1 and got started late hooking up to an IBM compatible. I am interested in a good, reliable patch librarian, sound editor, and sequence storage program. I invested about \$100 in the Big Noise librarian, but despite Richard Johnson's best efforts, it remains awkward and unreliable. Does anyone still sell such an animal for IBM and ESQ?

Next question: My ESQ now gives me 4 voices instead of 8. Reinitializing does not solve this. Is major surgery required?

Last, I think you have done well in continuing to find articles pertinent to the older machines, but I do miss the wealth of material I used to see about my ESQ-1.

Thanks and keep up the good work.

Ricky Troxler
Kenner, La

[CS – Since I seldom venture forth in the land of Big Blue and compatibles, I don't have a first-hand recommendation to make. Scanning a few back issues of the Hacker provides some ideas, however. For one, Dr. T's Software (220 Boylston St.m, Chestnut

Hill, MA 02167, (617) 244-6954) has an Editor/Librarian program for the ESQ called ESQape – you'll find it reviewed in the March '88 issue of TH. Dr. T's also markets the popular X-Or universal librarian program, which should include a profile for the ESQ. Also, I found a review in the April '88 issue of TH for a program I'd forgotten about, called ESQLIB, from S.N. Musser, (619 N. Park St., Allentown, PA. 18102). This program is strictly a librarian for sounds and sequences. I don't know if it's still available, but the reviewer liked it a lot.

As to your problem with half the polyphony gone from your ESQ, try unplugging the MIDI cable that's running from your computer to either the ESQ's MIDI out or MIDI in. If you find that you're back to 8 voices (and I'm almost certain you will), then the problem is that you are "echoing" MIDI data from your ESQ to your computer, and back to your ESQ's MIDI in. If this is the case, then every time you play a note on the ESQ, it sends a MIDI note-on to the computer, which echoes back to the ESQ. So the ESQ plays not only the note that you hit on the keyboard, but also the note coming in via MIDI – two notes for the price of one.

Most MIDI software makes provision to turn this MIDI echo on or off – sometimes it's called "Echoing," sometimes it's called "Soft Thru," "Patch Thru" or something along those lines. If you can't find reference to it in your software owner's manual, you may need to contact the software manufacturer to find out how to enable and disable the function.]

Dear Hacker,

I own an ESQ-1 (my one and only keyboard) and, although I occasionally make a buck or two) am a true amateur (the root of the word is amo, amas, amat – I love it). I've been reading your solid magazine for several years. Lately it seems that no one

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has much new to say about this great board – so I thought I'd better write.

I am on at least my fourth honeymoon with the ESQ-1. My trick for keeping the romance alive? Whenever I begin to feel like I know "almost everything there is to know," I pick one programming feature and study it hard. I do crazy things to it – push it to extremes.

For instance, set up a test patch and play with the relation between a filter envelope and the final amplifier envelope. If T1V is different what kind of effect do I get on the attack? How much keyboard control of attack variety can I get? If the decay settings are not synched – what happens? If I have two filter envelopes that sometimes offset each other, but not always, what can that do for the sound?

One useful discovery – set an LFO like this: **FREQ = 00, RESET OFF, HUMAN OFF, WAVE = NOISE, L1 = 00, DELAY = 00 L2 = 00, MOD = WHEEL.** Each key strike will generate a stable (flat "envelope") mod source, that varies somewhat randomly. If I modulate one OSC of a piano patch, I get a more realistic "out of tune" quality because the amount of "out of tune" varies from note to note. This random modulator can be lots of fun. (When the patch is first written into memory, the LFO will stay in the start position for some reason. This is also true at power up. Playing any patch where the LFO moves, or changing FREQ to 01, playing a note and going back to 00 sets up the effect.)

The basic leap that the ESQ took me through was this: as a piano-trained musician, I had always assumed that my responsibility for a musical tone ended when I struck the key – the rest was up to Mr. Steinway! The synth gave me back the potential responsibility for every nuance, every moment. My ears opened to the way sax players control a note; vocalists, guitarists – the best among them assume maximum conscious control of each instant! Their artistry leaves keyboard players in the dust, playing string pad presets or doing arpeggio gymnastics, instead of reaching the listener and moving his heart. If we learn this type of expression, maybe someday a synth player will be celebrated the way guitarists are today.

Ted Ulle
Brighton, MA

[CS – Thanks for the cool tips, Ted.]

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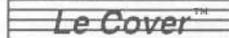
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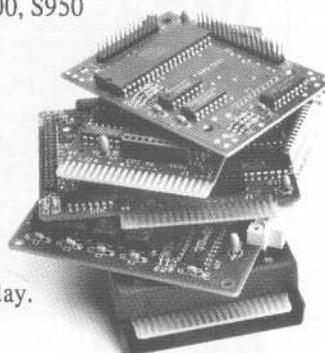
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