

Transoniq

Hacker

The Independent News
Magazine for Ensoniq Users

Programming the SQ-1: Taming Transwaves

Clark Salisbury



Welcome back! Well, I guess it wasn't really you that were gone for the last two months, it was me. Been a busy little beaver out here in the great Pacific Northwest. Busy, busy, busy. That's me, all right.

So. Where were we, now? Ah yes — we've looked at a lot of stuff in the old SQ. We've checked out the waves, LFO's, envelopes, filters, amplifiers, envelopes — covered a lot of ground. So far it's been pretty much your standard synthesizer stuff, though. Now it's about time to start getting into the interesting stuff that makes the SQ unique. We begin this month by looking at the Transwaves.

Transwaves are an Ensoniq innovation, and are a response to a problem that has surfaced with the advent of digital synthesizers that rely primarily on wavetables for their raw data — namely that sounds created by playing back digital wavetables can seem rather static. One of the things that makes acoustic instruments so pleasing is that the waveform produced by acoustic instruments is evolutionary — generally, acoustic waves are constantly changing — as the sound

moves through its stages, its harmonics interact in complex ways, producing an ever-changing timbre.

The transwaves differ from the other waves contained within the SQ in that they are not really just a single looped wave, but rather a series of different, but closely related, waves in which the loop can be freely moved through the wave. The effect is that the wave sounds different depending on where the loop is placed. If it happens to be placed in an area of the wave that contains a lot of high frequency information, the wave will sound bright. If the loop is placed in an area of the wave that does not contain as much high frequency information, the wave will sound darker. And if it's moved from one location to the other while the wave is playing, it will go from bright to dark, or vice-versa. For example, if we were to digitally sample the word "dayo" we could loop the entire word to produce "dayodayo-dayo..." If we use brackets to indicate the loop, we could show the same thing in this way: [dayo].

Suppose then we loop just the "a": d[a]yo. The resulting sound would be "daaaaaa..." Or if we looped just the "o" (day[o]), we'd get "dayooooo..."

Now let's say that we can control the start point of the sample. We could indicate the start point using the symbol ">"; in this case, setting the start point to the beginning of our sample could be shown in this way: >dayo. We could then produce sounds such as "ayoooo...", (d>ay[o]), "ayyyy...",

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(d>a[y]o), "yoooo...", (da>y[o]), and so on. And finally, if we could move the loop while the sound was playing, we could produce things like "dayooyadayooyad...", (>[d]ayo), and "ayyaayyaayyaay...", (d>[a]yo) by moving the loop back and forth, or things like "dddaaayyyooo,"(>[d]ayo), and "yyyyyaaaaa...", (d>[a]yo), by moving the loop slowly in one direction or the other.

This is much like what happens with the transwaves. Instead of using the collection of sounds that make up the word "dayo," though, each transwave is actually a collection of many similar waves that have been linked together. If you listen to a loop of any one of these individual waves, the resulting sound is somewhat static. But move the loop through the transwave, and the various waves it contains blend one into the next in much the same way that individual frames in a movie blend together to form a moving image.

So how is the loop moved through the transwave? Well, it can be manually set to any point in the transwave using the "start index" parameter. This not only sets the transwave to start playing from the point selected, but also places the loop at that point. In other words, setting the "start index" for the word "dayo" to "a," (d[a]yo), will produce the sound "aaaa..." But to actually move the loop through the transwave, we'll need to apply a modulator, such as an LFO or envelope. Let's try it out.

Start by selecting ROM program 04, "Today's Organ." First, let's set the effect to something more-or-less generic — perhaps the "Concert Reverb" would be a good choice. Hit "Edit," then "Effect," then the "0" button, and use the data slider or "Yes/No" buttons to change the effect from "Phaser+Reverb" to "Concert REVERB." Now we need to select voice1 for editing. Hit the "Wave" and then the "0" button to move to the "SelectVOICE" page. Solo voice1 by selecting it and hitting the "Up/Yes" button — the display should be showing something like this:

```
"SelectVOICE:ONE  
SOLO OFF OFF."
```

Now hit button "1" to move to the "Wave" page. Select "WAVEFORM" and hit "Up/Yes" twice to select the "TRANSWAVE" waveclass. The display should now be showing

```
"Wave=TRANSWAVE  
FORMANT-X."
```

Hit the "3" button — this takes us to the page where we can set the start index and mod source and depth for this particular transwave. Select the "Start Index" parameter, and move the data slider while playing something on the keyboard. As you move the data slider up, you'll hear the sound get thinner. Note that you can leave this parameter set to any value you like, and use the resulting wave in whatever sound you're trying to create. The really interesting stuff, though, occurs when you dynamically modulate the start index (actually, you'll be modulating both the start point and the loop location) with an LFO, envelope, or other modulator. Let's try using an LFO to hear an example of this.

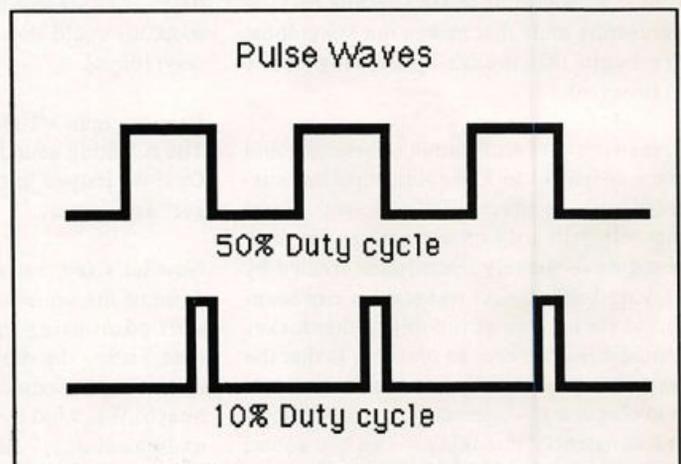
First, set the "Start Index" back to "00." Now set "Mod=" to "LFO * +99" — you should already be hearing the effect of LFO modulation on the start index, but let's tweak it up a bit.

Head over to the LFO menu (hit "LFO"). First, let's slow the LFO rate down a bit. Hit the "0" button, and change LFO rate from its current value of "29" to something like "20." Hit the "1" button to move to the next page. From here let's set LFO level to, say, "65," and "Dlay" (delay) to "00." It should become obvious by now that the LFO is modulating not only the transwave start index, but the pitch of the wave as well. Let's do away with the pitch mod for now — hit the "Pitch" button, then button "1." Set the "LFO=" parameter to "+00" (it should currently be showing a value of "+04"). This will eliminate the rather seasick-sounding vibrato.

Now head back to the LFO menu (hit the "LFO" button), and let's try some different LFO waveshapes. Press the "2" button to move to the LFO wave page — the wave used happens to be the trusty "Triangle" wave. As it so happens, the triangle wave is probably not really the best choice for a modulator in this application, since it has both positive and negative movement. You see, we've set the start index of the transwave to "00," the lowest possible number. When the triangle wave moves in a positive direction, of course, it moves the start index of the transwave higher, resulting in the sweeping effect you should be hearing. When it moves in a negative direction, however, the transwave seems to stop sweeping. This is because the transwave can't be modulated any lower than "00," even though the triangle wave produced by the LFO is moving in that direction. So a better choice for the LFO wave would probably be either of the positive-only waves, the "POS-SINE" or the "POS-TRI" — either of these waves will modulate the transwave start index with positive numbers only. Give each of them a listen — they produce subtly different effects. To my ear, the "POS-SINE" produces the smoothest sweep, so let's use this wave for now.

At this point, you might want to listen to some of the other transwaves, to get a feel for how each of them sounds when being modulated in this way. Head back over to the "Wave" menu and hit the "1" button. From here you can easily select the wave (in this case the "Formant-X" wave), and use the up/down buttons to step through the other available transwaves. Once you've finished, set the wave to "Pulse 1-X." We're going to use this wave to re-create a popular analog synthesizer string sound based on "pulse width modulation."

Back in the good old days, any analog synthesizer worth its salt included at least one pulse wave with a modulatable duty-cycle. A



(Continued on page 5)

RND (🎵🎵)

Hacker News

Since our very first issue one of the things that has helped make the *Hacker* a viable magazine has been Ensoniq's willingness to include sample copies with every keyboard that they ship. Recently Ensoniq decided to stop including sample issues with keyboards.

Ensoniq still sees the *Hacker* as a valuable resource and will continue to provide us with news and technical support and to respond to questions, problems, and suggestions that show up in the Interface. Ensoniq has also agreed to include with each instrument a flyer (provided by us) describing the *Hacker* and making our pitch. We're presently developing a way for us to include brief descriptions, listings, or small ads from our advertisers. If we do a good enough job on the flyer our circulation will also be unaffected. (Actually, a flyer might soften the somewhat intimidating first impression that the *Hacker* sometimes makes.) However, at this point, the long-range effects of Ensoniq's decision are mostly unknown.

As always, suggestions, feedback, and money-saving tips are extremely welcome — stay tuned.

* * *

Not only that! But we sure could use some SQ-1 & 2 and VFX & SD-1 Hackerpatches. Instant near-fame! We would also like to see some more writers join the ranks — particularly on these newer instruments. If you've got some new gear, please don't be shy. Newer readers may not be aware of it but just about all of our current writers originally showed up just innocently wishing to subscribe...

Oops — In last month's review of Sound Source Unlimited's Masteram 64 we gave the wrong zip code for Sound Source. However, they've changed their address since then anyway. The correct address is: 2985 E. Hillcrest Dr., Suite A, Westlake Village, CA 91362.

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.

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

EPS/EPS-16+ QUESTIONS — Erech Swanston, Maestro Sounds. 718-465-4058. Call anytime. (NY) If message, 24-hr callback.

VFX QUESTIONS — Sam Mims, Syntaur Productions. 818-769-4395. (CA). 10 am to 11 pm PST.

SEQUENCING — Larry Church, Danlar Music, 503-692-3663. Call anytime.

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 — "Mr. Wavesample" — 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, 317-357-3225. 8:00 am to 10:00 pm EST.

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

HYPERSOINIQ NEW PRODUCTS

First Generation announces the release of their upgraded computer synthesized sample library for the EPS-16 Plus. All samples are now true 16-bit format. In addition, effects have been programmed for every instrument and bank. All disks remain compatible with the original EPS and the price is still \$12 each, except Demo Disk #1 which is \$6 postpaid. First Generation samples are synthesized, processed and edited entirely in the digital domain. First Generation also announces its one-year free upgrade policy, effective *retroactively*. Any disk upgraded for any reason within one year of purchase will be sent to customers automatically. This means that all customers will receive the new 16-bit disks (corresponding to the ones they purchased) free of charge. Contact: First Generation, PO Box 748, Cocoa, FL 32923.

Jim Grote's 60 VFX-sd sounds have been extensively updated and reprogrammed, improving their sound and performance capabilities and adding new sounds. He's also cut the price to \$30. Contact: Jim Grote, 3721 Frances Ave., Cincinnati, OH 45211; (513) 661-8885.

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Taming Transwaves (Continued from page 2)

pulse wave with a 50% duty cycle (high 50% of the time, and low the other 50%) could also be called a "square" wave — that's because it looked square when viewed on an oscilloscope (diagram). This wave sounds much like the "Pulse 1-X" wave with no modulation and its start index set to "00." To hear this sound, set LFO modulation and start index both to "00" — your display should look like this:

"Start Index = 00
Mod=LFO * +00."

A 10% duty cycle, on the other hand, means that the pulse wave is high 10% of the time, and low the other 90%. If you now set the start index for the "Pulse 1-X" wave to "99," you should hear something very close to this sound.

To create more animated sounds, a modulator would often be applied to the pulse wave, much as we have done here with the application of a bit of LFO modulation. The resulting sounds were used in many different kinds of "patches," one of which is a string-ensemble simulation that has come to be associated with this technique of "pulse width modulation."

Now to get back on track — set the start index once again to "00," and LFO mod amount to "+99." Now let's tweak the filter a bit. Hit the "Filter" button, and then button "1." From here we can ad-



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just the cutoff point of filter1 — let's set it for something like "80" — since filter1 is set up for 3-pole low-pass operation, this should mellow the sound out nicely. Notice, though, that the high notes seem a bit too mellowed out — let's check the status of the keyboard tracking parameter. Hit button "2," and you'll find that, sure enough, keyboard tracking is set to "+00" — the filter is not tracking the keyboard at all. Let's try setting the "FC1 Keyboard" parameter to something like "+26" — this sounds pleasing to my ear, anyway.

Now let's move to the "Amp" menu, and apply a string-type default envelope. Hit the "Amp" button, then button "3." Hit the "Enter" button, scroll up until you reach the "SLOW STRING" default envelope, and hit the "Enter" button again to apply the envelope. And for the finishing touch, hit the "Effect" button, then the "0" button, and scroll up until you reach the "CHORUS+REVERB" effect. And there you have it — "pulse width modulation strings." For a bigger sound, you might want to try using two voices, with each using the "Pulse 1-X" transwave, but with slightly different settings for start index and LFO rate on each, and slightly detuned from each other. Or you might want use the voice we've just created, and add another voice based on the "STRING ENSEMBLE" wave, to create a hybrid analog synth/sampled string section sound. At any rate, if you want to keep this sound, save it now before we move on.

All saved? Good. Let's get back to the transwaves — there's some other stuff you can do with them that I'd like to be checking out.

We'll use our new string sound as the starting point for are next foray into transwave territory. Head back to the "Wave" menu, and press button "1" to move to the "Wave" page. What we're going to attempt is to simulate another classic analog-type sound, a high-resonance filter sweep. For this sound, we can use any of the "resonant" transwaves, "RESONANT 1-X," "RESONANT 2-X," "RESONANT 3-X," or "RESONANT 4-X." Each of these waves has a sound similar to that of an analog wave being routed through an analog filter with the resonance (or "Q" as it is sometimes called) set fairly high. The higher numbered resonant waves simulate higher resonance settings — as well as being somewhat different from one another timbrally. For our experiments, let's use the "RESONANT 3-X" wave.

First, let's try simulating a "filter sweep" using this wave. As you might guess, this can be accomplished by applying an envelope to modulate the "start index" of the wave. Hit the "3" button and select the mod parameter — it should currently be set to "LFO." Change this to "ENV2," and leave the amount of modulation set to "+99." The display should be showing this:

```
"Start Index = 00
Mod=ENV2*+99."
```

Now let's use ENV2 to create our "filter sweep." Head over to the ENV2 "defaults" page, and hit "Enter." Let's try the "Ramp Down" envelope — scroll until you see it in the display, and hit "Enter." Play a few notes to get a feel for the effect — a slow, resonant downward filter sweep. Let's try speeding it up a touch — hit the "0" button to move to the envelope programming page. You should find the envelope set to begin at a level of 99, move at

a time of 10 to the next level, which is also 99, then move at a time of 62 to a level of 00, the level at which it stays. We can speed up the effect of this envelope simply by reducing time2, the time it takes to go from level2 (99) to level3 (00). Let's change the value of time2 then from "62" to something like "32" — this speeds up our filter sweep rather significantly. Now let's adjust the "Amp" envelope to something a bit more appropriate for the sound we're after here. First, press the "Amp," then the "3" button, and hit "Enter." Let's start with the "PIANO DECAY" envelope — scroll to it, and press "Enter" once again. Now hit the "0" button to move to the envelope programming page — I want to make a couple of minor adjustments to the basic "piano" envelope.

First, I'd like this sound to be a bit more clavinet-like. One thing we can do to give a bit more of this kind of character is to shorten up the envelope's release time — otherwise known as "time4." Currently it's set to a value of "30" — let's change this to a value of "06." This, as you will recall, will cause the sound to decay more quickly once the key has been released. Next, let's lessen the effect that velocity has on the volume of the sound. Press button "1," and take the value for "LevV" down from "19" to "13."

Now let's brighten the filter up a bit. Hit the "Filter" button, then the "1" button, and increase the "FC1 Cutoff" (filter cutoff) parameter from "80" to "127" — full open. By now we should have a pretty respectable analog synth simulation. It might be interesting, though, to check back in with the transwave and see what other adjustments might be made there. So hit the "Wave" and then the "3" button to move back to the "Start Index" page. From here, we can adjust the depth of the "filter sweep" simply by adjusting the "ENV2" mod amount. Try setting ENV2 mod to something like "+36" to get a feel for this — now the envelope doesn't sweep quite as "high" in the transwave. While you're at it, you might try setting the start index to something higher than "00" — try "48," for example. Now the "filter sweep" doesn't end up going quite as dark as it did originally — that's because the transwave doesn't come back to a start index of "00" anymore, but to the brighter-sounding start index at "48." And as long as you're at it, you can reverse the "filter sweep" direction entirely by setting the transwave start index to "99," and the Env2 mod amount to "-99." Or you might try other modulators all together — you could set the start index back to "00," and use "WHEEL" (the modwheel) to modulate it. Try starting with a mod amount of "+99" — this will allow you to control the "filter sweep" from the modwheel, for those classic "wah-wah" type effects.

Be sure to check out some of these techniques with the other transwaves, too. And if you find a sound you like, be sure to check it out with some of the other effects available in the digital processing section — the addition of a bit of chorusing, flanging or phase-shifting might be a nice touch. And I'll see you back here next time for more programming and other digital hijinks. ■

Bio: Clark Salisbury is a partner in the MIDI Connection, a Portland-based consulting firm. He has been actively involved in the composition, performance, and recording of electronic music for over 7 years and is now producing his own pop-oriented compositions. His favorite color is chrome.

In Search of Hip Sounds...

Review: Signature Series Sound Library, The System ESS-14

Scott Leonard

For: EPS-16 Plus, EPS and EPS-M.

Product: Signature Series Sound Library, The System ESS-14.

Price: \$39.95 - 5 disk set.

From: Ensoniq Corp., 155 Great Valley Pkwy, Malvern, PA 19355.

You ever listen to a new song on the radio and say to yourself, "Where did they get that *awesome* snare drum sound?" Well, Ensoniq is leading the search. The Signature Series Library contains some of the best sounds available for the EPS/16+. The sounds in this review are from Signature Series newcomers, David Frank and Michael Murphy, better known as *The System*. These two are highly respected songwriters, performers, and producers.

There has been a lot of controversy the last year or so concerning the legalities of sampling from records without the consent of the copyright holder. This library represents a first for sampled sounds. Some sounds were sampled directly from The System's master tapes. So the sounds are not only cleaner, but they're (I suppose) "legaller." This is a giant step for Ensoniq and sampling in general, and I hope to see more of this in the future.

There are 5 disks in this library and the sounds aren't organized in any obviously logical fashion. I believe they did this in order to cram as many sounds on a disk as possible. So here are the sounds represented in a more organized fashion, along with my comments. Since most of you are original EPS owners, I'll comment on how the sounds work in both the 16+ and original EPS.

SYSTEM KITS - 1398 blocks - Great drum kit. The kicks and snares are big and processed just right. The horn and noise hits are very useful. This instrument is large, but I was able to create 400-500 block kits by deleting unused wavesamples. The sounds are not dependent on the effects, so original EPS users can make use of these sounds with very little modification.

DRUM LOOP - 479 blocks - This is a drum pattern sampled from the master tape and looped. I liked the groove but found it difficult to use with sequencing. Synchronizing the sequencer to the loop was the problem, and changing the tempo also means changing the pitch of the sample. A nice sound, but I doubt I'll use it. No effects used here, so original EPS users can easily scam on this one.

SYSTEM HITS and SYSTEM HITS II - 530 and 214 blocks - A strong collection of hip orchestral, horn, and sax hits. I had a great time using these sounds along with a nice dance or soul groove. Fine on the original EPS as well.

SYS BONUS 2 - 1378 blocks - AWESOME!! This instrument is definitely my favorite. It contains some of Mic Murphy's vocal phrases sampled straight from their master tapes. These sounds are super clean, real useful. My personal favorite is "DUNG-CHICKY-DUN-DUN-DA-DUN-DUN-DOO-DOO."

SYS SYN BS-1 thru 6 - 32-307 blocks - Great Moog style basses. The documentation says the sounds were created using a Mini-Moog and a Yamaha TX81Z, a hot combination for bass sounds. You get the warm, fat sound from the Moog, but the crisp attack and punch from the TX81Z. The chorus effect used on the sounds helped a lot so break out the effects for the original EPS.

SYSTEM SYNTH - 799 blocks - A nice fat synth-brass sound with useful variations in the patch-selects like a warm sustaining pad and a hard sampled brass. I felt this sound depended a fair amount on the effects and sounded sort of dry on the original EPS. If you have signal processing, use it for this one.

SYS BELL and SYS BEL BING - 1030 and 271 blocks - Nice FM synth-type bell sounds. They cut through a mix real well. I didn't care for the SYS BEL BING as much because it seemed to cut off - no sustain. I tried to loop this sound to get more sustain without too much success. Both work well in the original EPS, but the reverb in the 16+ gave a real polished sound.

My only major complaint here has to do with the demos. In order to use the demos, you must have a memory expander. Luckily I have one and the demos sound great. Maybe, however, they should have included a small demo for people with non-expanded machines. Oh well, you wanted the expander anyway, right??

Overall, I was *very* impressed with the quality of these sounds. They're clean and punchy and the price is right. Most of the modulators were put to good and tasteful use. If you are looking for great rap/soul/pop sounds, this collection should be in your library. The documentation is excellent, as with all Ensoniq products. And as always, listen to the sounds if possible before you buy. ■

Overall, I was very impressed with the quality of these sounds. They're clean and punchy and the price is right.

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—Electronic Musician, July 1990 (V101)

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Dan's Hospital Physician

Greaser/Nurminen

Daniel Mandel

Group: Greaser
Contact Info: Jim Greaser, 216 Walnut St., Roversford, PA 19468.

Group: Nurminen
Contact Info: Paul Nurminen, 304 West Oak Ave., El Segundo, CA 90245.

Equipment Used:

Greaser	Nurminen
EPS	EPS w/2x expander
Alesis Quadraverb	Alesis HR-16
Tascam Porta One	Yamaha PSS-680
Gibson SG	Tascam Porta 05
Yamaha 12 string	"Cheesy" Realistic Mixer
Cry Baby Wah	Teac V-570 Mastering deck
MXR Distortion	Casio SK-200 (in the closet)

For this article I've been listening to two different tapes by two different groups that I've put into the same category. It's not a category like Rock or Pop. It's not a musical category at all. It's a situational category.

The situation is that of the musical hobbyist. Maybe they've had a taste of professionalism. Maybe they are on the verge of a record deal. The following are some of the comments they wrote in to explain their situations:

Jim Greaser: *"This tape has about 40 minutes of tunes, all of which were primarily composed on the EPS. I don't sing, I'm not a lyricist, so they're all basically instrumentals. The intent I'm not sure of except that I'm basically a top ten type of guy. You know, 3-4 minute song with an intro, verse, chorus, and out. I can picture some of the tunes as backing for movies, commercials, and, with a good lyricist, a potential sing song."*

"I'm your basic "former musician" who played six years professionally, ended up with a day job and still went back to buying the latest equipment and sat at home at night to air out my head. Thus I must have about a hundred tunes in all in various finished and unfinished conditions."

"My equipment list is short (Note: after his equipment list he writes, "This is all I can afford!") I basically compose on the EPS and dump down to a Tascam Porta One 4-track on two tracks. Then I throw a lead on top or use the other two tracks to record guitar (my real instrument). The EPS made me a keyboardist. That's about it."

Paul Nurminen: *"I am very thankful for this opportunity to get*

some of my music heard by someone other than myself. I have been playing around with keyboards since about 1987. Before this time, I was a DJ (private parties, school dances and such), which by the way, was what got me interested in creating my own music. Anyway, I decided to go out and buy my first keyboard, a Casio SK-200, and began to write my own music. Then I acquired a Tascam Porta 05 which improved my ability to get my ideas across, but I was running out of sounds. I bought another keyboard, a Yamaha PSS-680. Then along came the Alesis HR-16. I loved it, except for the fact that my synths were missing something...POWER! Well, I finally settled on the Ensoniq EPS.

"After reading the manuals about 500 times, I really got into my new toy! The ideas just kept coming, and I just couldn't be stopped. Later, however, I realized that I had all these tapes of ideas and songs and sounds, yet no one to hear them.

"I guess I should tell you where I'm going with all of this. I hope to be able to make a comfortable living off this hobby of mine, but right now I just don't have the time or \$\$\$ to aggressively pursue it."

Now to the music!

Jim Greaser's tape, *VARIOUS SELECTIONS and MORE*, starts off with a song with a good rhythmic base. Very danceable with a moving keyboard part. The lead voice is well played and fits in almost every way, BUT — it is one of those sax patches that just doesn't do it for me. I know it's a sax patch, a fairly good one. But I know it's not a sax playing. This sax/non-sax lead is followed by a rhythm break and then enters the WAH. Very exciting guitar work! This takes the song somewhere. It's a little musical escape and then a return to the theme. At the end of the piece Jim uses a piano sound layered with a string sound that compliment each other perfectly.

The next song was slower, more moody. This time the sax/no sax lead came off as a bit more realistic. The notes were held out longer. I think I personally would have put a wetter reverb on the sax/no sax. There is one passage, however, where Jim played a very un-sax like phrase. There is a nice shimmeriness to this song; the way the cymbals were used.

Jim has definitely listened to a lot of top 40. His rhythms are all very danceable. He knows how to set up a groove and reduce it to its elements, or highlight and emphasize the most interesting parts. Overall he has captured a very full sound using brass strings, a variety of keyboard sounds. He plays a fine rhythm

and lead guitar. The mixes are all well done. Each voice is where it should be, and even though you might expect that Jim would pump up his leads over the rest, he didn't.

One of the songs begins with a very swooping intro. This was a very exciting intro element to use, but the problem was in the sample itself. I could hear where it looped — and having never owned an EPS I'm not sure how easy it is to rework your samples, but it would be worth the effort.

In summary, for Jim's tape I would have to give a thumb's down to the sax lead. His playing is fine, his phrasing is great. If he picked a patch that was more listenable I would have enjoyed this tape a lot more. I would also say more, more, more guitar! I think that Jim's guitar — his real instrument — is what puts Jim's signature on these tunes. They really make this collection tasty. But the guitar leads are too few. Show off!! Let me hear your guitar instead of the sax/no sax sound.

Paul's tape had four songs on it. And overall it had a more analog approach. Maybe it is Paul's history with some of the earlier pre-MIDI keyboards that influenced his sound choices. The first song has a synth-bass patch playing opposite a bell-like keyboard patch. The drums (I'm guessing from the Alesis) are fairly dry. After the song begins, there's not much change. Instruments drop out and a string part adds in, but for the most part there is not a lot altered to capture one's interest.

The second song has another analog type patch that sets up the chord progression. The drums sound dry and processed, which give this song a very tight dimension. What helps to spread it out is the string leads which are also synthy. There is some sort of ominous pulsing sound in the background which also adds character to this piece. Overall the sounds are thin. There is some interesting stereo placement and movement. Here when the main instruments drop out and all we are left with is the initial keyboard sound, the break is effective and refreshing. As an outro Paul chooses the string leads which stand out in contrast against the other sounds and the return of the ominous pulsing sound for a very strong, classical feel.

The third song begins with an airy vocal patch and, this time, a "rap" approach to the drum sounds. All of these tend to be very sequency. I can almost divide up the sequences into parts and talk about them separately. The vocal patch that is used is fuller. This song sounds bigger than the previous two. There is not a lot of movement in the base voice, however it is very thick and helps to add to the sound. In the middle of the song, brass is added. This is definitely the kick that this song needed! The sections, or sequences here, are pretty long.

The last song is very different. Paul describes it as "entirely made up of Depeche Mode samples." There is a heartbeat of a bass drum. There is a cricketoid percussion popping in every once in a while. The bass patch bubbles up from the bottom, very wet. Somewhere in there is a backward patch that shoops into itself. As the song progresses there is a metallic pipe sound that accompanies a crashing boom. All of which seems a rather

long intro for what follows. A horn/sax patch that plays the first hook I've heard so far. Then our buddy the cricket starts to perform a sort of scratch/scale to his heart's content. This is followed by some vocal snatches from Depeche Mode. To me, what Paul did on this last piece was the most interesting work on the tape.

Overall as I listen to Paul's tape I get the feeling that these are the backing tracks for... something. I am not left humming any hooks or any melodies. I am definitely not of the opinion that everyone should write a hook that any yuppie can learn in three minutes, however a "hook" is a tool that draws the listeners' interest.

I am fairly certain that most of us out there (yeah, me too) are hobbyists on one level or another. I would encourage these guys to keep it up. If you aren't a vocalist, find someone who is. For those of us with the luxury to have a home studio, we should exploit it to its fullest and keep on recording as much and as often as we can. I just hope that this kind of feedback is helpful for your next project! ■



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

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Review:

Ensoniq's SC-3 Soundcard

Jeffrey Rhoads

For: SQ-1, SQ-1+, SQ-2.

Product: SC-3 Soundcard.

Price: \$99.95.

From: Ensoniq Corp., 155 Great Valley Parkway, Malvern, PA 19355.

Accessories Order Line (800) 553-5151 or your local Ensoniq dealer.

When you decide to purchase a ROM Card for your synth, what characteristics should that library have? If you play many clubs, affairs and concerts the card should probably house an assortment of reasonable emulations; "copycats," if you will (strings, keyboards, pads, lead sounds and the like.) This may be particularly important if you're playing club dates or private affairs that call for cover tunes.

There are those of us, though, who prefer to avoid the joys of club dates and weddings, provided we can afford to. We instead pursue session work, teaching, composing, soundtrack work and the like. Often, we're looking for bold, different even odd tones in the mix.

The problem is that ROM Cards have become very specific; this is your basic "Rock Card," behold the "Jazz Card," feast your ears on this "Scary Textures Card" and so forth. Yes, it's nice to have a choice, but after spending more than a few francs on the animal, who can afford to feed it all that? What if we play out and compose? (NO, the dog's NOT for sale.)

Ensoniq seeks to answer our questions with its new ROM installment for the SQ series, the SC-3. This card has a split personality. Side A has neatly organized banks of Everything You'll Need On The Gig. Side B tempts our darker and more inquisitive side with moody bursts and sounds Mother Told Us Never To Use. So how does the SC-3 sound?

The first bank on Side A contains a fairly predictable and very competent group of strings. The string pads are full and dripping in reverb. "Really Strings," is a mildly muted pad with a fast velocity and attack. It's probably best suited for passages that require a quick unison string run. The mod wheel adjusts the brightness while timbre(!) controls reverb. It would be unfair not to mention that the elusive timbre controller is implemented in practically every patch on this card. Those mods assigned to timbre are (cleverly) secondary to the more performance-oriented changes given to the mod wheel. With a secondary controller, each sound is afforded more color and motion. Bravo.

If you like the strains of John-Luc Ponty or Michael Urbaniak, "Fusion Violin" may do them justice. It sounds better than some other solo strings in the bank because it is unabashedly electric with plenty of flange.

The second bank is the obligatory Vox Vocal bank. It seems that now every card has to have one, so there is really nothing very earth-shattering here. Maybe it's time to resist the temptation to include more than one or two of these behemoths in a collection. These "voxes" would seem, now, to function better as a small part in a non-vocal idea.

The next 3 banks represent brass, saxophones (and harmonicas) and woodwinds respectively. There are a couple of very good stabs in each section. "Large Brass," a punchy electro-brass stab with more than enough attack, will fill out most any blues arrangement in need of back-up. "Muted Trumpet," is the best representation of same you're likely to hear from any Ensoniq synthesizer. It is likely to become a classic for the SQ. Miles On A Foggy Day. (Yes, this sound is reminiscent of the T1 Muted Trumpet we hear Michael Wolff beat into submission every-other Arsenio Hall show.)

"Cajun Saxes," provides a very effective sax section. Although this patch sounds good all by itself, it really hits the mark when MIDIed up to even a less than perfect brass sound. (I used "Big City Brass" on the Proteus 1.) "Blues Harp" is a good try but, alas, not quite so effective. It just sounds too contrived. The attempt here is directed towards that "Harp-in-the-Bullet-to-a-Fender Twin" feel. But even good harp players (with real harmonicas) sometimes have trouble with that one. Thanks for trying, though.

The next bank is devoted entirely to Woodwinds. Yes, there's a nice collection here, but you may question (as did I) the need for more than one flute or "wood group."

Banks 5 and 6 are set aside for keys and guitar. "Hammond-ish," embodies the slow rotor, now-it's-far-now-it's-close effect we want from a Leslie and it comes complete with key-click. And although it is tagged "Classic Guitar" it lilts thru the jazzy "My Romance" with greater ease than does its sister patch, "Jazz Guitar." These banks, again, contain other good, facsimile sounds. However, as is the case with other ROMs I've used, two full banks of this kind of material seems to be somewhat of a stretch.

Side A's final bank finishes strong in the Bass and Drum department. "Electric Bass" is just that, simple, electric and clean. It should do quite nicely as a staple-studio low end. And "8 String Bass" is a full bodied 2 octaves above the root sound that will bring more life to Funk and Fusion Grooves. The "Drums" on this card are ENTIRE KITS. This is great for those players who sequence a lot and can never seem find enough variety in drum sounds.

Rather than look at Side B bank by bank, we're probably best served by looking at a few highlights. Given the more "eso-

teric" appeal of most of this side, these sounds aren't subject to tight organization, although, the last bank is reserved for Splits. Generally speaking, this second side of the SC-3 does what it's supposed to do; stir the creative spirit.

"Alienn Pad," uses the Inharmonic Cluster Loop as its pad waveform, while "Alien" is brought to life with a Synth Pluck. "Alienn Pad" is cold and spooky and could easily act as a substitute for "normal" pads. The "alien" can be controlled with timbre. "Electraglide" is striking as a demonstrator for the multi-wave. (And it's key mapped in Drum Mode.) Also try "Slow Wave" for a new twist on "Dark Shadows."

"Oscar's Trashcan" provides an answer for those of us asking "Why can't I find a dirty percussion instrument?" Comprised of rack bell and cowbell waves, it can be inserted in Latin rhythms instead of timbales.

The most interesting effect patch on this card is "Fly-By" because that's precisely what it does. It begins with a phasey whoosh generated by the noise loop. Then the transwave Airforce divebombs overhead with startling accuracy. The planes seem to come from a distance when reversing the mod wheel. "India" works because it sounds like its title; experiment with diminished scales while holding a low 5th. This sound will also double as a string pad.

Side B finishes with a very tasty set of splits. "Clav + Synth Bass," "Synth + Bass" and "Vibes + Bass" are fresh, clean alternatives to the usual Pianos + Bass. These splits work for the

composer who doesn't want to be bothered with finding bass sounds or even assigning MIDI channels. They're also very handy in some live performance situations.

The SC-3 was programmed by Andrew Schlesinger and the *Hacker's* own Clark Salisbury. Clark's been the *Hacker's* resident answerman for a while now and he's been writing an excellent "how-to" series for the SQ-1. His expertise with the SQ is well served by many of the stronger moments on the SC-3.

The only caveat I have with the SC-3 is not with the design of the individual sounds. Rather, I wonder why certain sounds are so similar to one another and why some banks contain the sounds they do. This is particularly true for side A. I wonder about the need for the sheer number of woodwinds and guitars, for example. Some will see what I view as a slight overkill on Side A as simply a way to cover multiple bases, a device to allow the musician to program rather than tweak. Ensoniq might have considered, though, letting the more interesting side B of the SC-3 bleed into side A.

The SC-3's a worthwhile investment. Side B is a lot of fun and experimental, yet with many practical uses. And the use of timbre as a controller earns points of praise. So, whether you're timing 40 minute sets or chasing SMPTE, this card may suit your needs. ■

And thanks go to Kip of Medley Music in Bryn Mawr, PA for his special assistance.

Review: Music Labs Sequences

Bryce Inman

For: EPS family (also available for the VFX-SD and the SD-1 — not reviewed here.)

Product: Sequences.

Price: \$15 per song (buy 6 and get the 7th free).

From: Music Labs, 505 Broadway, Suite 211, Tacoma, Washington 98402, phone: 206-272-7352.

Why do I need Music Labs?

So, there you are — you just got your first big break. You've signed a contract to do a week of gigs at the local Hop-til-U-Drop club, when it hits you — you don't have an act!!! Don't panic...Music Labs may be the solution to your problem.

Music Labs has developed a large catalog of sequences for the EPS family of keyboards with the following philosophy in mind: They want to make it possible for a person with no more than an EPS and a 2X expander to do an entire performance with little or no loading from disks while on stage.

How do they do this? Thought you'd never ask.

About the Instruments...

To eliminate the need to load instruments in the middle of a performance, they design all of their sequences around the same group of instruments. When you purchase your first sequences from them, Music Labs includes their "Setup Disk" which contains all of the sounds you'll need for all their sequences. The sounds are saved as a bank, so it only takes the press of a couple of buttons to load everything. When the Bank is loaded, your EPS will look something like this: Instrument 1 is left empty for moving things around or adding an extra sound of your own, Instrument 2 has a piano (the patch buttons bring up an organ or an electric piano), Instrument 3 contains four synth pads, Instrument 4 is strings, Instrument 5 has various brass sounds, Instrument 6 is guitar, Instrument 7 has four basses and Instrument 8 is drums.

About the sequences...

Each of Music Labs' songs is recorded as a single sequence, so you can have several songs loaded into the EPS's memory at the same time. The obvious advantage to this is that you can have an entire set of songs loaded before you start your set. As

a result, you won't have to access a single disk while performing. In addition, you can chain all of the sequences together in Song mode. Once you've done this, all you have to do is push "Play" once and you can go through an entire set without touching the EPS again.

There is at least one drawback to this method, however. Since a majority of the sequences use patch selects, you might not hear the correct sounds if you start the EPS playing in the middle of a sequence. While this isn't a problem in performance (unless you're on a roll and your audience begs you to do that last chorus of "The Beer Barrel Polka" one more time) this makes it a bit awkward for rehearsal. Although Music Labs provides a chart for each song indicating the location of each chorus, verse and bridge within the sequence, practicing with the track exactly as it is meant to sound requires starting from the beginning each time.

While the sequences that are available cover a variety of styles, they lean most heavily towards dance music. The list of titles I received (which isn't the most recent one since they are continually updating their list to keep up with the latest jams) contains over 100 Pop/Rock titles compared to 10 Country titles and 7 Standards (*Chattanooga Choo Choo*, etc.). (There's even a Milli Vanilli song on the list. I detect a subtle irony here: If you were to perform with this sequence, you would be pretending Milli Vanilli pretending to be Milli Vanilli.)

In their literature, the people at Music Labs state that they try to stay as close to the original version of these songs as possible. I must admit that my musical tastes veered away from the radio several years ago, so I can't vouch for most of the songs I heard. The ones I do know, however, are pretty darned close to the originals or as close as you'd expect from a decent band playing the nightclub circuit. The dance sequences tend to sound a lot better than the standards. For example: Although "What's New" is pretty faithful to the Linda Ronstadt/Nelson Riddle arrangement, it comes off sounding somewhat flat. The dance stuff, by contrast, is usually pretty hot — especially the percussion. To be fair, I'm sure that a lot of this has to do with the nature of the instrumentation of these contrasting styles. Since Dance music is generally recorded and performed with electronic instruments, it's much easier to reproduce this sound than it is to emulate songs that are recorded primarily with acoustic instruments. This has been one of the great challenges for all musicians involved with electronic instruments since the time a synthesizer beeped its first beep.

Is there anything else?

If you don't know anything about the EPS and all you want to do is load the sequences and play them, the materials included

with the sequences from Music Labs give you step-by-step instructions for doing this. To help you navigate your way through the sequences, each song is accompanied by a chart that includes the time of the song, the starting measure of each verse, chorus, etc. and a list of which tracks are in use.

If you want to customize the tracks to your own individual needs, Music Labs provides information about how to go about accomplishing this.

The most basic change you might want to make is to substitute your own favorite sounds for those which Music Labs includes with their sequences. If you have a 4X expander you will certainly want to replace the piano (the weakest of all the sounds; but hey — have you ever heard a good piano sample that didn't take up a ton of memory?) and strings and brass. While the sounds contained on their setup disk are certainly usable, I found that the overall sound of the sequences was improved by substituting sounds of a better quality. No big surprise there.

Another option would be to MIDI some of the sounds to other keyboards or modules to further enhance the sound or to free up voices so you can play along with the sequences. Since the drum kit Music Labs provides follows Roland key assignments, you can MIDI the drums to your favorite drum machine.

Music Labs' sequences are designed to provide all of the instrumentation for each song — all you need to add is the vocals. If want to play along with the sequences, you could delete the keyboard track (or drums or guitar or whatever instrument you play) and play along with the rest of the instruments. If later on you add another member to your act, you could delete that instrument also. Of course, the reverse would also be true: if a member of your group has to miss a performance, all you have to do is put the missing part back into the sequence.

Might I make a suggestion?

About the only thing I can think of that Music Labs might do to improve their product would be to provide printed music with their sequences. I know that this would involve more work and expense (I don't say this flippantly...music publishing is what I do for a living) but it seems to me that this would be a very useful addition to their product. I suppose that a lack of printed music isn't that important if you just plan to sing along with the sequences — it

wouldn't be too hard to get the lyrics from a recording by the original artist (I would assume that you would order songs you already know anyway); it seems to me, however, that if you wish to play along with these songs, this might prove to be a more difficult task. Even for those people who are able to figure out the music just by listening to it, I think that the availability of printed music would be considered a valuable asset.

In my opinion...

When I first saw that Music Labs' sequences were all programmed around the same group of instruments, I figured they'd all sound pretty much alike. I must admit, however, that I was pleasantly surprised at the diversity of sounds that they've been able to produce within this context.

The overall quality of the sequences is very good. The heart of Dance music is the beat set down by the percussion and Music Labs has done an excellent job here. If you were to get on stage with tracks that sounded like they were programmed on a cheapo drum machine, you'd get justifiably snickered at. That's not the case here — even the wallflowers will be tapping their toes once the beat kicks in.



As they used to say on American Bandstand, I'd give it a 92 — it's got a good beat and it's easy to dance to! Music Labs also supplies sequences for the VFX-SD and the SD-1. ■

Bio: Bryce Inman is a free-lance music editor and arranger for Word, Inc. in Irving, TX. Although he has decided to make Texas his permanent home, he refuses to say "y'all" or "fixin'."

Review: The EPS Sampling Book

Michael L. Schmitt

For: EPS.

Product: *The EPS Sampling Book* by Bobby Maestas - 155 pages spiral bound.

Price: \$21.95 + \$2.50 s/h.

From: Mix Bookshelf, 6400 Hollis Street #12, Emeryville, CA 94608, phone: 1-800-233-9604.

I was really excited to see this book advertised in the Mix Bookshelf catalog. It was supposedly designed to start at the entry level and work the novice up to sampling, complex looping and editing. Great — at long last a good "do it yourself" book on sampling.

Unfortunately, it was a serious disappointment. This book caters only to the novice. In fact it is so basic it never gets past the information contained in the two manuals that come with the EPS! The first 70 or so pages aren't even about sampling. They are about how to load sounds, performance presets, hooking the EPS to a mixer etc... all basic info contained in the *Musician's Manual*.

I skipped this part and went straight to the chapter entitled "Prepare to Sample." The first lesson covers setting the vu meter and how to change the sampling rate. The tricky question of what sampling rate to use is brought up, but the only advice given is to choose a sampling rate twice as high as the highest frequency of the sound you wish to sample. That's it! If a chart had been given displaying different instruments and their highest frequencies, along with recommended rates, this advice would be at least a little helpful. But no such chart is given and since this is supposed to be a beginner's book, anyone who would buy it probably isn't going to know what the highest frequency of their sample instrument is, so this advice is useless.

The next couple of chapters cover sampling bottles, was-

tepaper baskets, etc... which is all fun but everyone has done these things before, and usually within minutes of buying their EPS, and certainly no one has had to tell them to. Among sampler owners, this type of behavior is instinctive.

Two more chapters go on to describe how to use a multi-track recorder with an EPS. The book recommends putting the straight sound on one channel, mixing a delayed channel with it, then sampling it. Big deal. What people need to know is how to set seamless loop points and then edit the sample to turn it into a useful instrument. Unfortunately only 14 pages are given to actual instruction on loops, and most of these are mere descriptions of loop points and auto looping. Only four pages are given to advanced looping functions such as cross fade loops, bidirectional x-fade, etc... and these are only descriptions with no elaboration on how they should be used.

And that's it! There's not even any mention of envelopes, filters, or LFO. In fact the most advanced subject covered is layer glide mode and how to set up a legato layer. (For those who don't know how see Layer Glide mode under the chapter "Layer Parameters" of the *EPS Advanced Applications Guide*.) Everything in this book is contained in the EPS manuals. The only person who might get some use out of it is someone who bought a used EPS without manuals, but they can be purchased from Ensoniq for \$7.95 each. *The EPS Sampling Book* is \$21.95! And, surprisingly, it's published by Mix Bookshelf, which in all fairness does publish some terrific books on music.

Thumbs down for *The EPS Sampling Book*. ■

Bio: Michael L. Schmitt studies classical guitar and composition at Indiana University. He also writes for and plays MIDI guitar in Bestiality Killed the Cat, a high-tech industrial dance band of very questionable virtue.

VFX-SD/SD-1 Tips — Six Pairs and a Spare

Jeffrey P. Fisher

I bring to these hallowed pages my own list of a dozen tips, gleaned from experience, that you can use to get more from your VFX-SD/SD-1. You'll probably notice that these are all sequence/performance tips. Well, with over 1000 sounds in my library, I don't really do much voice programming — only tweaking.

Making music is my business, so running the sequencer, mixing, and getting good, solid tracks down fast is my most important concern. These tips are the result of my trying to make the hardware as transparent as possible so it doesn't get in the way of what it is really all about: creativity.

1. SAVE OFTEN. I know it's been said many times, many ways, but save often! Keep a scratch disk in the drive and save as you work. You can organize your best songs and sequences later.

When naming a file, put a number in the first position, e.g. 1ROCK. When saving to the scratch disc, just hit one key (with keyboard naming enabled, of course) to name subsequent versions: 2ROCK, 3ROCK, etc. This way you won't be deleting the old versions. You will save the different versions that reflect the song's progress and can always go back to earlier ideas.

When the final version is down, give it a name for life and save it to your main disk. And don't forget to make a back up of your main disks. When the scratch disk is full, either erase it and start over or file it for extra protection. This same procedure applies to sound/preset design. If you are like me, you tweak by ear and never write anything down. By taking a quick minute to save, you will have a reference to return to as the sound takes shape. Often version 4 is better than version 17, if only you could remember that VCA setting...

2. BE CAREFUL when you save 30 seq/song files. If the music you have created is in Banks 0 – 4 and you save banks 5 – 9, and there just happens to be nothing in Banks 5 – 9 you save the nothing. And if you decide to delete your old file in the process and replace it with new changes, you will write "nothing" over the top of "something." I speak from experience and it is why I highly advocate tip number one.

3. WHEN YOU SAVE 30 or 60 seq/song files, always save the programs too. It is hard to remember what sounds go

with what sequences. And it is a waste of time trying to find them.

I have a sequence that I have no idea what sounds it originally used. I've been close, but never exactly right. But I'm sure the sounds are on a disk somewhere...

4. IF YOU HAVE an extra track (and voices to match), copy a comp track to a blank track location. Next, give the copied track a different patch or variation of the first. Use the shift function and move the copied track ahead in time by a few clocks. Pan the two tracks hard left and right and the comp track will spread out in stereo very nicely. The amount of clocks depends on the song tempo and the subtlety of the effect you are after.

Try it with brass stabs, electric piano sounds, and strings. You can, of course, assign the copied/shifted track to MIDI and send it to an external sound generator.

5. PLAY REPEAT ECHOES in time with the music on the track or a separate track. Follow the tempo and fade the repeat echoes through velocity, MIDI volume controller 7, or mixdown volume (and pan!).

Try it with woodblock, tambourine, or those infamous brass stabs — just about any percussive sound works. You get a digital delay, in perfect time, without having to use an internal or external effects processor.

6. DON'T RUN EVERYTHING through the same effect — even if it's a multi-effect. Make the bass line dry, make the kick dry, route some sounds through one effect; others through both, and get some variety in your musical life. Make sure you check the volume of dry versus wet tracks. If the bass is dry and everything else is wet, the bass will be overpowering, so back off on the volume a bit.

7. BE CAREFUL NOT to have too many voices set to CNTL in a dynamic effect. Otherwise, conflicting controller information will go to the effect and create some weird, unpredictable results. See Tip Number Eight.

8. SET MULTIPLE VOICES to CNTL in a dynamic effect.

You can get some strange and wonderful results that might be musically useful. See Tip Number Seven.

9. USE THE AUX OUTS. (See Tip Number Six.) Try the bass and kick drum to one AUX out (using pan and effects routing) and process it at the board to get the bottom end really happening. Send the snare out the other AUX for additional beefing up with EQ and external reverb.

You may need to have the kick, snare, and bass on separate tracks to have this kind of control, but you do get 24 tracks — the Beatles only needed four for *Sgt. Pepper*. Sometimes I will rout a guitar voice through the AUX and run the signal through stomp boxes or (eek!) to a guitar combo amp and mike it up. Let's face it — it's the only way to get *that* sound.

10. USE THE MASTER KEYBOARD functions to control your entire rig. Set up the VFX-SD and other components in your system so that selecting a preset or sequence will configure your whole system. It takes a while to organize all those patches, effects programs, et al, but it is well worth the extra effort. You will ultimately save a lot of time by having everything organized. It does wonders toward enhancing your creativity.

Don't you just hate it when the hardware gets in the way? As an extra plus, it will really impress your friends (and clients!) when one button changes everything.

11. BE EXTRA CAREFUL when deleting bars from a sequence or when deleting a song step. These are the only changes that you can not audition. Make the change and those precious musical moments are gone forever. See Tip Number One.

12. DOUBLE CHECK the edit tracks=song or sequence when preparing mixdown volume and/or pan. You want to mixdown the correct sequence/song track. Even though you can audition the change, you don't want to waste your time doing it over.

BAKER'S DOZEN. Sometimes it is just plain easier to use MIDI volume controller 7 than mixdown volume. Personally, I play more naturally with the volume pedal, but then again, I'm really a guitarist who happens to play keys, too. ■

Ensoniq VFX-SD and SD-1 Sequencer File Formats

Gary Giebler

In my last article, I described the diskette formats for each of the Ensoniq keyboards. This month and next I will discuss the format of the sequencer files for the VFX-SD and SD-1 keyboards. This information can be used to write special purpose editing programs such as a utility to change the notes on a track from one drum machine to another. I put that feature into my VFX-SD programs to allow me to transfer drum mapping to the VFX-SD drums when I get a standard MIDI file which has Yamaha or Roland drum tracks. If computer programming isn't your specialty, several programs discussed in this article are currently available from Giebler Enterprises.

VFX-SD and SD-1 Sequencer File Types

The VFX-SD and SD-1 can store sequences and songs on diskettes in several ways. An individual sequence or song can be stored in a One-Seq/Song File. Thirty sequences or songs (Banks 0-4 or Banks 5-9) can be stored together in a file with or without programs (sounds). All sixty sequences or songs can be stored in a file with or without programs. When storing programs in a thirty seq/song file, the user can elect to store thirty or sixty programs along with the sequences. To deter-

mine the file type, refer to my article on Ensoniq Diskette Formats in the July 1991 *Hacker*.

One Seq/Song File Format

Location	Contents
000 - 187	Sequence Header (See below for format)
188 - 511	Unused (Remainder of block filled with 00)
512 - 575	Sequence Data Offsets (See below for format)
576 - xxx	Sequence Track Data
xxx - zzz	Unused (Remainder of block filled with 00)

Thirty Seq/Song File Format (No Programs)

Location	Contents
0000 - 5639	Sequence Headers for 30 sequences
5630 - 6143	Unused (Remainder of block filled with 00)
6144 - xxxx	Sequence Data - Offsets & Track Data for defined seqs
xxxx - zzzz	Unused (Remainder of block filled with 00)

Thirty Seq/Song File Format (30 Programs)

Location	Contents
0000 - 5639	Sequence Headers for 30 sequences
5630 - 6143	Unused (Remainder of block filled with 00)
6144 - 22043	30 Programs (530 bytes each)

22044 - 22527 Unused (Remainder of block filled with 00)
 22528 - xxxxx Sequence Data - Offsets & Track Data for
 defined seqs
 xxxxx - zzzzz Unused (Remainder of block filled with 00)

Thirty Seq/Song File Format (60 Programs)

Location	Contents
0000 - 5639	Sequence Headers for 30 sequences
5630 - 6143	Unused (Remainder of block filled with 00)
6144 - 37943	60 Programs (530 Bytes each - mixed together)
37944 - 38399	Unused (Remainder of block filled with 00)
38400 - xxxxx	Sequence Data - Offsets & Track Data for defined seqs
xxxxx - zzzzz	Unused (Remainder of block filled with 00)

Sixty Seq/Song File Format (No Programs)

Location	Contents
00000 - 11279	Sequence Headers for 60 sequences
11280 - 11281	Current Selected Sequence Number
11282 - 11285	Sum of All Sequence Data Sizes + FC (hex)
11286 - 11300	Global Sequencer Information
11301 - 11775	Unused (Remainder of block filled with 00)
11776 - xxxxx	Sequence Data - Offsets & Track Data for defined seqs
xxxxx - zzzzz	Unused (Remainder of block filled with 00)

Sixty Seq/Song File Format (60 Programs)

Location	Contents
00000 - 11279	Sequence Headers for 60 sequences
11280 - 11281	Current Selected Sequence Number
11282 - 11285	Sum of All Sequence Data Sizes + FC (hex)
11286 - 11300	Global Sequencer Information
11301 - 11775	Unused (Remainder of block filled with 00)
11776 - 43575	60 Programs (530 Bytes each - mixed together)
43576 - 44031	Unused (Remainder of block filled with 00)
44032 - xxxxx	Sequence Data - Offsets & Track Data for defined seqs
xxxxx - zzzzz	Unused (Remainder of block filled with 00)

The thirty and sixty sequence files always store all of the sequence headers (30 or 60 respectively), but only the defined sequences have their offsets and track data stored. For example, if sequences 3, 5, and 10 are the only defined sequences, and they are stored as a thirty sequence file, sequence 3 track data would be stored first, followed by sequence 5 and then sequence 10. The offsets and track data for each sequence would start at the beginning of the next block in the file, so the remainder of the last block of each sequence would be filled with 00. Each defined sequence takes at least one block of disk space, so a 60 sequence file with all sequences defined can be rather large even if the sequences don't contain any notes! The global sequencer information in the sixty sequence files contains most of the values from the Sequencer Control Pages and the Click Page. Contact Giebler Enterprises if you need the format of the global information.

VFX-SD and SD-1 Sequence Header Format

Bytes	Definition
00	Original Sequence Location (00 - 59) (FFh if Seq Undefined)
01	Flags: ?? ?? ?? Fx CkRc CkOn Loop Song (Song = 1 if Song) (Fx = 0 if Song & Effects =

Location	Contents
02-12	Seq CkRc = Click during Record Only, CkOn = Click On ?? = reserved for future use, currently set = 1 Sequence Name - 11 bytes (If Song, Byte 02 = \$) MSB set if corresponding track is not muted and contains data
13	Unused Name Byte (00 or 20 hex) MSB = mute for track 12
14-15	Sequence Length (Measures or Bars)
16	Upper Time Signature (1 - 99)
17	Lower Time Signature (0=1, 1=2, 2=4, 3=8, 4=16, 5=32, 6=64)
18-21	Punch In Location (in ticks) Edit Start Point
22-25	Punch Out Location (in ticks) Edit Stop Point
26	Tempo
27	Number of Song Steps (FFh If Not Song)
28-38	Track 1 Parameters
39-49	Track 2 Parameters
50-60	Track 3 Parameters
61-71	Track 4 Parameters
72-82	Track 5 Parameters
83-93	Track 6 Parameters
94-104	Track 7 Parameters
105-115	Track 8 Parameters
116-126	Track 9 Parameters
127-137	Track 10 Parameters
138-148	Track 11 Parameters
149-159	Track 12 Parameters
160	Current Selected Track Number
161-171	Current Layered Track Numbers
172-182	Sequence Effect Parameters
183-185	Size of Sequence Data Section
186	Major Rev. of Operating System used to write file
187	Minor Rev. of Operating System used to write file

Track Parameters and Effect Parameters are defined in the owner's manuals for the keyboards, so I won't spend time covering them.

VFX-SD and SD-1 Sequence Track Offsets

Size of Seq	Start Trk 0	Start Trk 1	Start Trk 2
00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
Start Trk 3	Start Trk 4	Start Trk 5	Start Trk 6
00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
Start Trk 7	Start Trk 8	Start Trk 9	Start Trk10
00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00
Start Trk11	Start Trk12	Multi - Trk	Song Track
00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00

Size of Seq is the total number of bytes of memory used for the sequence data including the track offsets. Track Offsets (Start of Track) are from the start of the sequence offsets and point to the start of track data for each track. If the sequence is a song, Song Track points to the start of the song track data. The Multi-Track offset is not used in the disk files. It is only used in the internal keyboard memory. Ensoniq defines track 0 as the conductor track which currently contains only Clock events. Hopefully, tempo and time signature changes will be added in the near future. ■

Conclusion next month.

Bio: Gary Giebler is the Manager of Computer Engineering for Eagle Comtronics - a cable TV manufacturer. Gary owns and runs Giebler Enterprises where he produces computer software, records, tapes, and compact disks. Gary still has over 800 copies of his first album in his bedroom closet.

Reverberating Around on the ESQ-1

Kirk Slinkard

ESQ reverberation has been mentioned in articles and patches to varying degrees in past issues of this illustrious magazine, but I thought that there was a need for a more in-depth look at it with experimental patches. The information here is intended mainly for the ESQs because they don't have the second release option like the SQ-80, but it can be used equally well on both types, and even on the VFXs and similar synths. There are only three practical ways that I can think of to do this effect on the ESQ: You can use an out-board effects processor, you can play the ESQ in a reverberant room, or you can use the envelope release times in certain specific ways. The first two methods sound the best, but they are not what this article is about, so forget about them for now.

When thinking about a reverberant sound, consider it in two parts — the original sound component and the reverberant component. This latter part usually comes in just after the original sound starts and sustains for a while after the original sound stops. In most situations, the reverb component is much quieter than the original sound, and may not

be heard at all when the original sound is happening. When it does come through, though, it tends to add mostly to the midranges and sounds like a complex chorusing. Although for the ESQ patches here, we will primarily be adding the sustain part to the end of the original sound. But there's more than one way to skin a patch.

Longer Release

About the simplest way to make a regular patch seem more reverberant is to increase the release time on the amplifier's envelope(s). This method has been used as long as there have been synthesizers, but be warned: This is often not very realistic at all. There are cases, however, in which this technique can be used for a somewhat adequate reverberation simulation. Check out "VOCALS" (below) for an example. This simulates a big choir in a large reverberant hall. In a real-life case like this, the direct sound of the choir would be heard from some significant distance, and the hall's reverberation becomes a major part of the choir's sound. So when the choir stops singing, the reverberation dies away with a

SQ-80 PROG: VOCALS								BY: Kirk Slinkard									
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH									
OSC 1	-1	0	0	VOICE1	LFO2	+1	OFF	-									
OSC 2	0	3	4	VOICE2	LFO2	-1	LFO1	-62									
OSC 3	0	0	0	VOICE2	LFO3	+2	LFO1	-50									
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH											
DCA 1	55	ON	OFF	-	OFF	-											
DCA 2	54	ON	OFF	-	OFF	-											
DCA 3	56	ON	OFF	-	OFF	-											
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH										
FILTER	60	3	0	VEL	+7	OFF	-										
	FINAL VOL	PAN	PAN MOD	DEPTH													
DCA 4	63	8	KBD2	+63													
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD									
LFO 1	0	ON	OFF	SQR	63	0	0	OFF									
LFO 2	18	OFF	ON	TRI	10	0	0	OFF									
LFO 3	19	OFF	ON	TRI	10	0	0	OFF									
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK							
ENV 1	-	-	-	-	-	-	-	-	-	-							
ENV 2	-	-	-	-	-	-	-	-	-	-							
ENV 3	-	-	-	-	-	-	-	-	-	-							
ENV 4	+63	+63	+63	19	26	28	0	0	40	0							
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC									
MODES	OFF	OFF	OFF	0	OFF	OFF	OFF	OFF									
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY										
	OFF	-	OFF	-	OFF	-	-										

SQ-80 PROG: REVRB1.								BY: Kirk Slinkard									
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH									
OSC 1	0	0	0	OCT+5	OFF	-	OFF	-									
OSC 2	-	-	-	-	-	-	-	-									
OSC 3	-	-	-	-	-	-	-	-									
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH											
DCA 1	0	ON	ENV1	+21	ENV4	+42											
DCA 2	-	OFF	-	-	-	-											
DCA 3	-	OFF	-	-	-	-											
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH										
FILTER	127	0	0	OFF	-	OFF	-										
	FINAL VOL	PAN	PAN MOD	DEPTH													
DCA 4	63	8	OFF	-													
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD									
LFO 1	-	-	-	-	-	-	-	-									
LFO 2	-	-	-	-	-	-	-	-									
LFO 3	-	-	-	-	-	-	-	-									
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK							
ENV 1	+63	+63	+63	0	0	0	0	0	0	0							
ENV 2	-	-	-	-	-	-	-	-	-	-							
ENV 3	-	-	-	-	-	-	-	-	-	-							
ENV 4	+63	+63	+63	0	0	0	0	0	50	0							
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC									
MODES	OFF	OFF	OFF	0	OFF	OFF	OFF	OFF									
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY										
	OFF	-	OFF	-	OFF	-	-										

SQ-80 PROG: REVRB2.								BY: Kirk Slinkard		
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH		
OSC 1	0	0	0	OCT+5	LFO1	+1	OFF	-		
OSC 2	-1	11	30	OCT+5	LFO1	+1	OFF	-		
OSC 3	0	0	2	OCT+5	LFO1	+1	OFF	-		
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH				
DCA 1	0	ON	ENV1	+21	ENV4	+35				
DCA 2	0	ON	ENV1	+19	ENV4	+33				
DCA 3	0	ON	ENV1	+18	ENV4	+32				
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH			
FILTER	127	0	0	OFF	-	OFF	-			
	FINAL VOL	PAN	PAN MOD	DEPTH						
DCA 4	63	0	ENV1	+63						
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD		
LFO 1	25	OFF	OFF	TRI	0	0	0	WHEEL		
LFO 2	-	-	-	-	-	-	-	-		
LFO 3	-	-	-	-	-	-	-	-		
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+63	+63	+63	0	0	0	0	0	0	0
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	0	0	0	0	0	50	0
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC		
MODES	OFF	OFF	OFF	0	OFF	OFF	OFF	OFF		
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY			
	OFF	-	OFF	-	OFF	-	-			

SQ-80 PROG: REVRB3.								BY: Kirk Slinkard		
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH		
OSC 1	0	0	0	OCT+5	LFO1	+1	OFF	-		
OSC 2	-1	11	30	OCT+5	LFO1	+1	OFF	-		
OSC 3	0	0	2	OCT+5	LFO1	+1	OFF	-		
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH				
DCA 1	0	ON	ENV1	+23	ENV4	+33				
DCA 2	0	ON	ENV2	+21	ENV3	+31				
DCA 3	0	ON	ENV2	+20	ENV3	+30				
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH			
FILTER	8	0	0	ENV4	+63	ENV1	+55			
	FINAL VOL	PAN	PAN MOD	DEPTH						
DCA 4	63	0	ENV1	+63						
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD		
LFO 1	25	OFF	OFF	TRI	0	0	0	WHEEL		
LFO 2	-	-	-	-	-	-	-	-		
LFO 3	-	-	-	-	-	-	-	-		
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+63	+63	+63	0	0	0	0	0	0	0
ENV 2	0	+63	+63	0	0	11	2	0	0	0
ENV 3	0	+63	+63	0	0	11	2	0	53	0
ENV 4	+63	+63	+63	0	0	0	0	0	53	0
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC		
MODES	OFF	OFF	OFF	0	OFF	OFF	OFF	OFF		
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY			
	OFF	-	OFF	-	OFF	-	-			

tone very much like the sound of the choir when it is singing. Also, there is not much of an immediate drop in volume when the original sound stops at the beginning of the reverb decay, so that all of this basically just adds a smooth decay to the choir's original sound. So the "VOCALS" patch just takes a basic choir sound and adds a little longer decay time at envelope 4 which controls DCA 4. The more complex the parts you play, the more realistic this patch sounds. If you just play one note or chord though, the limitations of this kind of approach really become obvious. The end result is not the best possible reverb effect you've ever heard, so how can we improve it?

Combining Envelopes

A little more sophisticated way to simulate reverb is to use two envelope generators with different release times, one for the original volume envelope and one for the reverb decay, then adding them together. This gives an immediate drop in volume at the end of the original sound, which is a more common situation in real life. Usually you would be closer to the original sound source, giving it much more volume than the reflected sound. Fortunately, the earlier Ensoniq synths' voice structures permit this technique to be easily used. The experimental patch "REVRB1." uses envelope 1 turned up one-third at DCA 1 to give the basic volume envelope to the organ sound of oscillator 1 (2 and 3 are turned off). Envelope 4 has the reverb decay time and is

turned up two-thirds at DCA 1 to combine with envelope 1. I used envelope 4 here in stead of 2 or 3, because this way the final DCA 4 is automatically adjusted to have the proper sustain so that it won't cut off the reverb decay. This combination of envelopes works basically like the SQ-80's second release option in its envelopes. So listen to the "REVRB1." patch, you can hear a reverb effect, but it sounds really dull and flat. So what can we do to make it better?

Chorus And Stereo

For the "REVRB2." patch, I have added the other two oscillators with the same waveform, but detuned a little for a chorus effect. This chorus carries over to the reverb decay and gives it a much more natural randomness and richness. Listen to both "REVRB1." and REVRB2." and you can really hear the difference the chorus makes in the realism of the reverb sustain. Chorus is actually very closely related to reverb in that they are both delay effects. In fact, reverb could be described as a complex chorus effect with sustain. This patch is a more finished patch and includes a vibrato activated by the mod wheel. In this situation, the vibrato also affects the reverb. I'll leave it up to you whether this sounds good or bad — I'm undecided. "REVRB2." also uses a stereo effect. Envelope 1, the basic sound envelope, is applied to the pan parameter which is set to zero, or all the way to the left to give the main sound a central location in the pan while the envelope is on,

and then the reverb decay is heard off to the left as envelope 1 turns off. The reverb effect is starting to sound pretty good here, but we can make it sound just a little more natural.

Not So Bright

The reverb decay in "REVRB2." sounds really bright, and because of this loses some of the natural quality that it could have. It really doesn't sound like a real-life reverberation. Generally speaking, actual reverberation will lose its high frequency components first as they get absorbed by various soft materials in a room, leaving the reverberation sounding less bright than the original sound. The VFXs and other SQs include a parameter in some of their reverberations called "high-frequency damping" to simulate this, but for the ESQs, we'll have to do something in the filter. The "REVRB3." patch combines envelopes 1 and 4 with the frequency parameter in the filter (note that the amounts of all these should add up to a total of 127 or less, because this is the maximum allowable modulation in the filter). This way, the reverberation isn't as bright as the main part of the sound. And because envelope 4 is used, the reverb loses even more brightness as it decays to zero. This makes for a very natural-sounding reverberation.

Pre-Delay

When you were listening to "REVRB3." you may have noticed a sort of slapback echo sound at the beginning of the notes. This is actually a simulation of the reverberation pre-delay. This simulates the way you would hear the original sound briefly by itself before the reverberation kicks in. This is something else for which the VFXs and other SQs have a parameter in some of their reverb effects. In this patch, oscillators two and three use envelopes two and three in their DCAs to delay the start of their sound. Envelopes two and three are the same as one and four except that two and three have a delay at their beginning that is controlled by times one and two. T1 controls how long the envelopes rest at zero before they come in and T2 controls how slowly they kick in. This pre-delay effect is kind of subtle, but you might find that it helps to fool most people into thinking that you are playing through an effects processor. On the negative side, this effect isn't heard on short staccato notes, where it is most dramatic on external effects units. You actually have quite an advantage here over the SQ-80's second release, because the things you have complete control over include:

1. Relative volume of reverb to original sound.
(Relative levels of envelopes 4 and 1, or 3 and 2, at DCAs 1 through 3, also total volume of oscillators 2 and 3)

2. Reverb decay time.

(Envelope 4 release time)

3. Reverb brightness.
(Filter freq. setting)

4. How much brightness the reverb loses as it decays.
(How much envelope 4 is used in filter modulation)

5. Reverberation pre-delay.
(Envelopes 2 and 3 T1 and T2)

6. Chorus intensity
(Oscillators 2 and 3 detuning amounts)

Epilogue

This technique of simulating reverberation might sound a little different for each waveform. The reverb decay part of the sound takes on the personality of the waveform that it was made from, sometimes more than it would with a reverb processor or natural reverberation. You might find that some waveforms might need the filter to be set a little lower or higher in frequency during the reverb decay to sound as realistic. Individually adjusting the different reverb parameters for each patch in a sequence or song can be fun because you can get each separate patch to have a reverberation sound different from all the others, giving an illusion of different distances, or even different environments to each instrument.

If you can get a hold of Issue #37, check out C. R. Fischer's article on reverberation (and other delay effects) for a slightly different approach that uses the FORMANT waves. Back in Issue #43, Sam Mims discussed how to create an echo effect and said "We'll cover some simple tricks this time, and get on to more complicated delays and reverb effects some other time." This is the real reason that I did this article. I had been waiting for Sam's next installment, and finally the suspense became so unbearable that I wrote my own. Hey Sam, don't think that this article gets you off the hook, I'm still waiting for what you have to say on the subject.

As for the rest of you, may you reverberate long and prosper, and I'll mod you later. ■

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

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ESQ & SQ-80 Hackerpatch

By Sam Mims

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.

ESQ Patch: POLISI

by Claudio Sansilvestri, Barasso, Italy

This is a sound that I developed by changing the parameters of the ESQ-1 while the sequencer was playing disco house sequences. I've used it almost as a drum fill, playing 32nd notes, or for fast staccato lines, such as playing arpeggios in octaves. Try also simulating brass hits with chords.

The Hack

This is a very nice sound, except that it dies in the upper register. The problem is that the filter frequency is set so low that the higher pitches are being cut out. To get around this, I set the KEYBD parameter on the FILTER page to 22. This brightened the sound significantly, which I liked. If you want it as dark as the original, adjust the depth of the ENV 3 modulator to around zero. To get a little more stereo motion, I went to the LFO 3 page and changed the FREQ to 04 and DELAY to 08. Note the excellent reverb effect achieved by setting T4 of ENV to its maximum value, then limiting the release with T4 of ENV 3, which controls the filter.

SQ-80 Patch: BRASST

by P. T. Brown II, Myrtle Beach, SC

This is a modified brass sound, which I have used often.

The Hack

BRASST is more of a realistic horn section than a synth brass sound. There is a subtle sforzando built in via ENV 3 modulating the filter. If you need the sound to cut through a bit more, try raising the filter cutoff FREQUENCY to 39 or so. One other subtle change I made was to set T1V of ENV 3 to 05; this gives a sharper attack when notes are played hard. As a final tweak, I added a bit of spaciousness by using KBD2 as the PAN MOD (DCA 4 page) with a depth of +30.

ESQ owners can substitute SAW waves for the BRASS waveforms, and get a different but usable sound. For more of a synth brass sound, turn SYNC on, and apply a bit of filter resonance. For a cheesy synth brass, turn AM on.



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.

ESQ-1 PROG: POLISI										BY: Claudio Sansilvestri									
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH											
OSC 1	0	0	0	SAW	ENV1	+2	*OFF*	-											
OSC 2	0	0	4	SAW	ENV1	+6	*OFF*	-											
OSC 3	0	0	8	SAW	ENV1	-1	*OFF*	-											
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH													
DCA 1	0	ON	ENV2	+63	ENV3	+40													
DCA 2	0	ON	ENV2	+63	ENV3	+40													
DCA 3	0	ON	ENV2	+63	ENV3	+40													
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH												
FILTER	0	2	0	ENV3	+36	*OFF*	-												
	FINAL VOL	PAN	PAN MOD	DEPTH															
DCA 4	52	8	LFO3	+63															
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD											
LFO 1	-	-	-	-	-	-	-	-											
LFO 2	-	-	-	-	-	-	-	-											
LFO 3	1	OFF	OFF	TRI	0	63	63	*OFF*											
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK									
ENV 1	+63	0	0	0	0	5	10	0	0	0									
ENV 2	+63	+63	+63	0	0	0	63	63	0	9									
ENV 3	+63	+56	0	0	1	0	63	63	45	0									
ENV 4	+63	+63	+63	0	0	0	63	63	63	0									
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC											
MODES	OFF	OFF	OFF	0	ON	OFF	OFF	OFF											
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY												
	OFF	-	OFF	-	OFF	-	-												

SQ-80 PROG: BRASST										BY: P. T. Brown II									
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH											
OSC 1	0	0	0	BRASS	LFO3	+3	LFO1	+8											
OSC 2	-1	0	3	BRASS	*OFF*	-	LFO1	+8											
OSC 3	0	0	3	SAW	ENV1	-1	LFO1	+1											
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH													
DCA 1	63	ON	*OFF*	-	*OFF*	-													
DCA 2	63	ON	*OFF*	-	*OFF*	-													
DCA 3	63	ON	*OFF*	-	*OFF*	-													
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH												
FILTER	33	0	26	ENV3	+37	*OFF*	-												
	FINAL VOL	PAN	PAN MOD	DEPTH															
DCA 4	63	8	*OFF*	-															
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD											
LFO 1	27	OFF	OFF	TRI	0	0	0	WHEEL											
LFO 2	-	-	-	-	-	-	-	-											
LFO 3	19	OFF	ON	TRI	0	1	3	*OFF*											
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK									
ENV 1	+63	-63	0	0L	0	8	8	0	6	9									
ENV 2	-	-	-	-	-	-	-	-	-	-									
ENV 3	+59	-20	0	63L	0	7	40	20	11	21									
ENV 4	+63	+59	+55	10L	0	0	20	63	25	0									
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC											
MODES	OFF	OFF	OFF	4	ON	ON	ON	OFF											
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY												
	OFF	-	OFF	-	OFF	-	-												

SD & VFX Hackerpatch

SD & VFX Prog: D HEAVENS

By: Walter Cooper, Latter Sound Productions

NOTES: D HEAVENS is one of the ethereal sounds from Latter Sound's Volume I collection. Moving the mod wheel forward brightens the sound. Play a chord and sustain it, then press patch select *0 and repeat the chord: you will hear the horns come in nicely.

is a beautifully haunting sound using the Marimba waveform, yet enveloped to sound like a crystal wine glass being rubbed.

Thanks to Latter Sound for releasing the patch to public domain.

- Sam Mims

THE HACK: This patch sounds great for doing soundtrack work. I found the initial attack of the notes to wiggle a bit too much in pitch, so for voices 1 and 3, I turned the LFO amounts (Pitch Mod page) to -1 and +1 respectively. The other voices work fine once these are toned down a bit. The other thing I did was sacrifice the 0* patch select — barely distinguishable from the 00 patch — for a setting that plays only voice 2. This

SELECT VOICE

WAVES	1	2	3	4	5	6
Wave	Strings	Marimba	Vocal Pad	Strings	Vocal X	Uni Brass
Wave Class	StrngSnd	TunedPerc	BreathSnd	StrngSnd	Transwave	BrassSnd
Delay	0	0	0	0	0	0
Start	0	99	99	0	99	0
Vel Start Mod	0	0	0	0	0	0
Mod Scr					ENV2	
Mod Amt					-99	

MOD MIXER	1	2	3	4	5	6
SRC-1	Press	LFO	Press	*Off*	LFO	*Off*
SRC-2	ENV1	ENV2	ENV1	Noise	Noise	ENV1
SRC-2 Scale	2.0	0.1	2.0	0.1	0.1	1.0
Shape	LateRise	Smoother	LateRise	Smoother	Smoother	QuikRise

PITCH	1	2	3	4	5	6
Octave	+1	0	+1	0	0	0
Semitone	0	0	0	0	0	0
Fine	+6	-4	-8	-4	+4	-8
Pitch Table	System	System	System	System	System	System

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

FILTER 1	1	2	3	4	5	6
Mode	2LP	3LP	3LP	2LP	3LP	2LP
Cutoff	72	61	72	70	0	72
KBD	+8	+8	+8	+8	+8	+8
MODSCR	Wheel	Wheel	Wheel	Wheel	Wheel	Wheel
MODAMT	+22	+17	+22	+22	+17	+22
ENV2	+35	+35	+35	+35	+99	+35

FILTER 2	1	2	3	4	5	6
Mode	2LP	1LP	1HP	2LP	1LP	2LP
Cutoff	87	93	0	93	93	87
KBD	+13	+13	+13	+13	+13	+13
MODSCR	Pr+V1	Pr+V1	Timbr	Pr+V1	Pr+V1	LFO
MODAMT	+34	+34	+77	+34	+34	+28
ENV2	+19	+19	+19	+19	+19	+19

OUTPUT	1	2	3	4	5	6
VOL	99	99	99	67	99	99
MODSRC	*Off*	*Off*	*Off*	LFO	*Off*	*Off*
MODAMT	0	0	0	+4	0	0
KBD Scale	0	0	0	0	0	0
LO/HI Key	A0/A0	A0/A0	A0/A0	A0/A0	A0/A0	A#4/A#4
Dest Bus	FX1	FX1	FX1	FX1	FX1	FX1
Pan	20	20	71	50	80	50
MODSRC	Mixer	Mixer	Mixer	Mixer	Mixer	Mixer
MODAMT	+30	+30	+30	+15	-30	+30
Pre-Gain	Off	Off	Off	On	Off	Off
Voice Prior	Medium	High	Medium	Medium	High	Medium
Vel Thresh	0	0	0	0	0	0

LFO	1	2	3	4	5	6
Rate	22	17	22	33	17	16
MODSRC	Pedal	*Off*	Wheel	Press	*Off*	*Off*
MODAMT	+30	0	+30	+10	0	0
Level	14	99	14	23	99	42
MODSRC	Mixer	Mixer	Mixer	W1+Pr	Mixer	Wheel
Delay	56	0	56	41	0	56
Waveshape	Sine	Sine	Sine	Sine	Sine	Pos/Sine
Restart	Off	Off	Off	On	Off	Off
Noise SRC RT				47	21	

ENV1	1	2	3	4	5	6
Initial	99		99			99
Peak	50		50			50
Break 1	32		32			32
Break 2	0		0			0
Sustain	0		0			99
Attack	18		18			15
Decay 1	17		17			23
Decay 2	39		39			39
Decay 3	18		18			18
Release	99		99			25
KBD Track	0		0			0
VelCurve	QuikRs		QuikRs			QuikRs
Mode	Finish		Finish			Repeat
Vel-Level	0		0			0
Vel-Attack	0		0			0

ENV2	1	2	3	4	5	6
Initial	0	0	0	0	0	0
Peak	36	36	36	36	50	36
Break 1	46	46	46	46	99	46
Break 2	36	36	36	36	36	36
Sustain	36	36	36	84	89	36
Attack	46	46	46	46	46	46
Decay 1	30	30	30	30	30	30
Decay 2	31	31	31	31	31	31
Decay 3	37	37	37	37	37	37
Release	57*	57*	57*	57*	57*	57*
KBD Track	8	8	8	8	8	8
Vel Curve	Cnvx1	Cnvx1	Cnvx1	Cnvx1	Cnvx1	Cnvx1
Mode	Norml	Norml	Norml	Norml	Repeat	Norml
Vel-Level	26	26	26	26	26	26
Vel-Attack	41	41	41	41	19	41

ENV3	1	2	3	4	5	6
Initial	55	18	55	37	55	55
Peak	65	65	65	65	65	65
Break 1	90	90	90	90	90	90
Break 2	99	99	99	99	99	99
Sustain	86	92	86	86	92	86
Attack	16	16	16	16	16	16
Decay 1	16	16	16	16	16	16
Decay 2	31	31	31	31	31	31
Decay 3	47	47	47	47	47	47
Release	60*	61*	60*	60*	61*	58*
KBD Track	10	10	10	10	10	10
Vel Curve	Linear	Cnvx2	Linear	Linear	Cnvx2	Linear
Mode	Norml	Norml	Norml	Norml	Norml	Norml
Vel-Level	26	26	26	26	26	26
Vel-Attack	58	58	58	58	58	58

PGM CONTROL

Pitch Table	Off
Bend Range	**
Delay	x1
Restrike	49
Glide Time	0

EFFECTS (1)

Effect	Chorus & Reverb 2
Decay	50
FX1Mix	50
FX2Mix	25

EFFECTS (2)

Rate	17
Depth	51
Delay	250
Rate Mod	+99
Depth Mod	-6
Mix	50

EFFECTS (3)

Waveshape	Sine
ModScr	Timbre
HF Cut	Off

PERFORMANCE

Timbre	0
Release	0
Pressure	Key

SQ-1 & 2 Hackerpatch

Jeffrey Rhoads

Prog: Zoot Suit By: Yours truly (Jeffrey Rhoads)

Notes: Sometimes horns are used in a tune to give it punch or even to make it sound more "modern." But many current horn-section charts (synthesized or not) are still rooted in the Big

Bands of the '40s. Older arrangements are sometimes given a whole new slant by substituting synth brass for real horns (e.g., Extensions by Manhattan Transfer). But many synthesized "sections" sound contrived and not very acoustic in character. Rather than fight this tendency, I chose to roll with it.

WAVE	1	2	3
Select Voice	On	On	On
Wave Class	Waveform	Brass	Tuned Perc
Wave	Sawtooth	Trump Var	Synth Pluck
Delay Time	000	000	000
Wave Direction		Forward	Forward
Start Index		28	00
MODSCR	Off	Off	Off
MODAMT		00	00
Restrck Decay	00	00	00

PITCH	1	2	3
Octave	-1	-1	+0
Semitone	00	00	00
Fine	-02	-03	00
ENV1	+05	+02	+02
LFO	00	+02	00
MODSCR	Veloc	Veloc	Off
MODAMT	+03	+04	00
KBD Pch Track	On	On	On
Glide	Off	Off	Off
Glide Time	00	00	00

ENV1	1	2	3
Initial	05	99	15
Peak	51	00	00
Break	20	00	00
Sustain	22	00	00
Attack	10	14	31
Decay 1	14	99	00
Decay 2	27	99	73
Release	99	99	45
Vel-Level	72	26	13
Vel-Attack	72	19	13
Vel Curve	Quikrise	Quikrise	Linear
Mode	Normal	Normal	Normal
KBD Track	00	00	00

LFO	1	2	3
LFO Speed	37	31	44
Noise Rate	00	00	00
Level	00	21	17
Delay	00	00	00
MODSRC	Wheel	Wheel	Wheel
Wave	Tri	Pos/Tri	Tri
Restart	On	On	On

FILTER	1	2	3
Filter 1	2Lo	2Lo	2Lo
Filter 2	2Lo	2Lo	2Lo
FC1 Cutoff	033	095	127
ENV 2	69	40	89
FC1 KBD	12	16	00
MODSCR	Wheel	Wheel	Off
MODAMT	15	54	00
FC2 Cutoff	057	066	076
ENV2	36	35	61
FC2 KBD	00	00	00
FC1MOD-FC2	On	On	On

ENV2	1	2	3
Initial	76	15	99
Peak	29	88	99
Break	76	62	99
Sustain	29	27	99
Attack	23	17	63
Decay 1	51	59	18
Decay 2	83	66	65
Release	32	35	10
Vel-Level	19	19	00
Vel-Attack	06	19	00
Vel Curve	Quikrise	Quikrise	-
Mode	Normal	Normal	Normal
KBD Track	70	26	00

AMP	1	2	3
Initial	90	40	95
Peak	94	99	99
Break	99	99	99
Sustain	88	99	18
Attack	00	00	23
Decay 1	00	52	32
Decay 2	79	68	99
Release	28	24	10
Vel-Level	72	26	53
Vel-Attack	72	26	33
Vel Curve	Quikrise	Quikrise	Convex
Mode	Normal	Normal	Normal
KBD Track	00	42	00

OUTPUT	1	2	3
VOL	86	78	67
Boost	On	On	On
MODSRC	ENV1	Keybd	LFO
MODAMT	07	03	-05
KBD Scale	-18	00	+45
Key Range	C2-C7	C2-C7	C2-C7
Output Bus	FX2	FX1	FX1
Priority	Medium	High	Low
Pan	+28	00	-28
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.)

CONCERT REVERB

FX-1	34
FX-2	44
Decay Time	48
Diffusion	72
Detune Rate	38
Detune Depth	26
HF Damping	66
HF Bandwidth	53
LF Decay	+10
MOD (Dest)	
BY (MODSRC)	Mod Pedal
MODAMT	99

The Hack: Voice 1, Sawtooth, uses Veloc and Env 1 & 2 for A) a slight post-attack pitch shift and B) a swell over effect. Voice 2, Trump Variation, provides a more mellow base, using a bit of LFO (mod wheel) for animation only. A detune effect between these two voices is achieved with Veloc Mod in the Pitch Section. Voice 3 adds the metallic click. In addition to increasing LFO, the mod wheel opens the Filter for Voices 1 & 2. (Push the mod wheel up a third to one-half.) Zoot Suit is probably best suited (?) for fat, full voicings. This patch may evoke memories of Prophet 5 and OBX brass.



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.

Classifieds

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INSTRUCTION

VFX-sd TALKING OWNER'S MANUAL (tm) PLUS disk produced for Ensoniq. The manual "you don't need to read" to understand your VFX-sd intimately. 113 minute comprehensive cassette explains applications and capabilities while your hands operate its controls. Send \$15.00 check/money order; includes P/H/Tx to: Talking Owner's Manuals-VFX 21405 Brookhurst, Huntington Beach, CA 92646.

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The Interface

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

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

Electronic mail - GENIE Network: TRANSONIQ, CompuServe: 73260,3353, 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.

The Interface:

Can you give me the pin-out (also referred to as a pinning chart) of a SCSI System Cable? This is the cable that goes from the EPS to a SCSI hard drive; one end has a DB-25 connector and the other end has a 50 pin "telco" connector. I'm trying to troubleshoot a ground-loop noise problem with my system. By referring to the SCSI Cable pin-out chart on page 498 of "The Winn Rosch Hardware Bible" (Brady Books, 1989), there seems to be an excessive amount of ground pins with this standard.

I'm using an original EPS on stage with a 4x memory expansion unit manufactured by PS Systems, and a PS Systems SCSI interface adaptor. I have a PS Systems 44 MByte removable hard drive. For audio, I connect the "mono" output of the EPS to a TOA KD-3 Keyboard Amp. The problem is when I plug the hard drive in, I get a tremendous amount of audio noise. I can eliminate a portion of the noisy signal by putting a 3-prong to 2-prong A.C. adaptor on the TOA A.C. power cord. However, this does not eliminate the noise completely, and as you probably know, it is an unsafe condition, because the A.C. third-pin safety ground on the TOA amp is defeated.

Any help would be appreciated.

Also, here's some other information to pass along to anyone thinking about adding a hard drive to their system. If I try to load sounds from the hard drive while I play the keyboard, the sound that I'm playing will "sustain" while the new sound file is loading. According to Ensoniq, this is due to the way the EPS is shuffling memory. The bottom line is, don't expect to be able to play a funky, staccato bass riff while loading a bank of sounds for your next tune at the same time.

One final point, since adding the hard drive, the EPS will have a tendency to crash and lock-up" as the memory limits are pushed to the maximum. For example, if the internal memory of the EPS is nearly full with such sound files as a large string section, piano, drum kit, and horns, and I try to load another large file, sometimes I'll get the "delete more" message but the EPS locks-up meaning it won't respond to any button pushing, and I have to reboot.

Ric Cicchinelli
CompuServe [73327,132]
Massillon, OH

[CS - Unfortunately, the pin-out information you seek is not published and available to the mortal man. However, some users have reported positive results by lifting the ground on the hard drive. Also, Pro-Co makes an accessory that may be of some help - an isolation transformer for the audio signal. You plug your audio cable into it and it isolates the ground from the audio signal. You may also want to contact Ensoniq customer service (215-647-3930) - they may be able to help you trouble-shoot the problem.]

The crashes and lock-up' you are experiencing when loading large sounds is not normal. Best guess is that it's related to a problem with a RAM chip, or perhaps a problem occurred when the SCSI hardware was installed. In either case, you'll need to be in touch with PS Systems for service in these areas.]

[Ensoniq - Most hard drives have switching power supplies, which can generate a lot of digital noise and hum when their earth ground is connected to their signal ground. Ground-lifting the hard drive with a 3-to-2-prong adapter can work quite well. Note that as long as the EPS remains grounded, this does not create an "unsafe" condition, as there is still an earth ground return via the EPS.]

Regarding Load While Play functions, if you push the technology to the maximum you can always expect some shuffling to take place. Load While Play uses Direct Memory Access (DMA), which steals time from the main processor. The more data you load, the more time is taken from the main processor, and eventually you will hit limits.]

Transoniq Hacker,

Say, how practical would it be to reprint articles from some of the more ancient issues? There is some great stuff back there that most of us would never get to see otherwise. Also, what is the latest news about the Hackerpatch?

Here are some questions for Ensoniq:

1. When I first turn on my VFX-sd version 2, the disk drive activates and looks like it is searching for some secret instructions. What is going on here?
2. Why does the "PIPE ORGAN" wave sound distorted on about the lower one-third of the keyboard? I heard this on a SQ-1 plus also.
3. Do you think that there would be a place in the market for a \$5,000.00 monster Ensoniq synth?
4. How about a rack-mount SQ-80?

So Ensoniq, as long as I've got you here, here is my wish list for future synthesizer features:

1. A global section that includes not only the effects processor, but an LFO (this would be great for organ vibratos and electric piano tremolos, etc.), a balanced modulator, and a preamp for external signals.
2. A voice structure that has at least two oscillators per voice with A.M. and sync functions like the ESQs and SQ-80, with one oscillator available as an assignable modulator.
3. Modulatable start and finish points for all the waves and samples. (Did I hear about a sampler that does this?) This would be an incredibly powerful synthesis tool!
4. Craig Anderton's MULTIPLE IDENTITY FILTER which uses a standard filter I.C. in an extremely versatile way.
5. All modulators would cover the entire modulation range of whatever they are modulating.
6. The return of the "KEYBOARD 2" modulator from the ESQs and SQ-80.
7. New single-wave samples of Hammond organs, and heavy metal guitar loops.

So thanks for listening and keep up the good work.

Your subscriber,
Kirk Slinkard

Lakewood, CO

[CS – Unfortunately, reprinting specific articles from back issues is not real practical. Entire back issues can be ordered, though, as well as collections of articles relating to Mirage operations and Mirage disk reviews – check the box labeled “Back Issues” for more info. As for your other questions:

1) The disk drive is not seeking any instructions in particular; it's just checking to see if a disk is inserted or not. This is so that, for example, when you hit the 'Load' button the VFX-sd will know whether to load the directory from whatever disk might be inserted or whether to display the message “Disk Drive Not Ready” message.

2) The pipe organ wave is not distorted in the lower ranges. The pipe organ wave is multi-sampled, and as with a real pipe organ, the lower notes provide many more harmonics than the higher ones. What you are hearing in the lower ranges is a sample of a real pipe organ with all the stops pulled out – a very big and admittedly somewhat gritty sound.

3) My understanding is that Ensoniq's philosophy and business strategy has always been to build products that most musicians would find affordable. In today's market, products costing in the \$5000 and up range are considered expensive, and no matter how good they are, do not sell in sufficient quantity to justify the R & D required for a company like Ensoniq to produce them. I think Ensoniq prefers to create an affordable platform from which the user can expand, as his budget permits. For example, the combination of an SD-1 with a rackmount EPS-16 PLUS retails at around \$5000, and provides a very powerful music-production environment. And better yet, you don't have to buy it all in one chunk.

4) Seeing as how the SQ-80 has been out of production for a few years now, I don't think it likely that you'll see a rack-mount SQ-80 anytime real soon.

For the most part, your suggestions seem like good ones to me. And yes, you have heard about a sampler with modulatable start points, loop position, loop start and end points, and loop length – it's called the “EPS-16 PLUS.”]

[Ensoniq – Regarding the \$5000 unit, we are not specifically opposed to a higher price point product and would consider it if it can enhance the current product line we

offer. We do focus on creating instruments that the majority of the public can afford and chose to be sure that we are providing that type of product to the best of our abilities. What the future holds – we'll never say never!]

Dear Clark,

A bit of advice on sampling: I'm still stuck on my old EPS but this goes for all samplers. Over a number of years I've read a good deal (books and magazine articles, including TH) on sampling but I don't recall reading anywhere this one important fact on controlling the sample input level: Just like analog tape recording, always record at the highest level short of any clipping. Once a sample has been taken, there is no way to increase the signal-to-noise ratio unless you know that there is noise (hiss, for example) at a particular frequency range and reduce that frequency range through equalization. Using the NORMALIZE GAIN command on the EPS will increase the total signal that you have recorded, including the noise (i.e. inaccuracies in the sound signal). It's like enlarging a photograph – you'll never see details that were not present in the negative.

It's easy to demonstrate this. Find an appropriate sound on a CD or tape. Sample it at the highest level below clipping. (On the EPS an “AMP” light flashes whenever any clipping occurs. I assume this takes place when a little subprogram finds two or more maximum levels or two or more minimum levels next to each other.) Just to be sure this sample is at maximum possible strength, use the NORMALIZE GAIN command, Next, sample the same sound at a MUCH lower level. Bring it up to the same strength as your first sample with NORMALIZE GAIN. Compare the sound quality of the two samples.

I'm sorry if I've bored those of you who have already figured this out but it bothers me that I haven't seen this in print before. Good Sampling!

Sincerely,
Jonathan Whitcomb
Long Beach, CA

[CS – You bring up a good point, Jonathan – normalizing will not salvage a noisy sample. Always try to sample at the maximum level possible before clipping.]

Dear TH,

The best software available so far for the EPS and other Ensoniq instruments is Gary Giebler's Ensoniq Disk Manager and EPSSMF. The price is right and Gary even walked me through one process I didn't understand. This is part of what Ensoniq promised us for over a year in O.S. 2.5.

Ensoniq, when will 2.5 be out? And how about BACK UP for the hard disk?

TH – your mag is great.

The old piano player,
Jim McDonald
Fayetteville, AR

[CS – Ensoniq is currently in the testing phase for OS 2.5 for the EPS. In the meantime, they have released OS 2.49 (available through your local dealer or direct from Ensoniq) which addresses most of the issues that were scheduled for release with OS 2.5. The one thing not included in OS 2.49 is the hard-disk backup software – for this, you'll have to wait for OS 2.5.]

Dear Transoniq Hacker,

I have two questions concerning my EPS running on O.S. 2.40.

When I play back a song which has songtracks, these songtracks seem to slow down in comparison to the sequencer tracks. (When I look on event-edit, every note is in the right place, so everything is recorded perfectly.)

When I “mixdown” a song (with no songtracks, only based on sequences) my EPS has problems doing the volume changes. When I do volume changes on only one track, everything goes just fine. But when I try to make changes on multiple tracks my EPS crashes on the fourth or fifth track.

Is something wrong with my EPS or do they all do this?

Yours faithfully,
Johan Tyvaert
Roeselare, Belgium

[CS – There's probably something wrong with your EPS. Song tracks should play back in sync with sequences, and inputting mixdown volume changes should not cause your unit to crash. It's probably time to get in touch with your nearest service center.]

[Ensoniq – It is also possible that your O.S. disk somehow got corrupted. You might try

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To whom it may concern:

I'm using a sample editing program called "Samplemaker V1.52" on an Atari 1040 STE. Virtual Sounds Inc. developed the program and Dr. T's marketed it. The program has since been discontinued.

This version supports the Ensoniq EPS. I'm having problems getting a sample from the EPS into the computer for editing. Every time I try to upload a sample into Samplemaker I get an "Error \$0004, Function \$06, Second rcv in error" message in my dialog box.

I have no problems downloading a sample I've created in Samplemaker to the EPS, so I must have things hooked up correctly. I'm also using a very small sample to experiment with (24 blocks) in case memory space was a factor.

I called Dr. T's and they were also perplexed by the problem. Is anyone out there using this combination that could enlighten me concerning this problem?

Sincerely,
James Rosand
Port Angeles, WA
(206) 457-0545

[CS - I have no experience with this particular program. Perhaps one of our readers might have some insight?]

[Ensoniq - We've heard of the program but never actually worked with it. Here's a possible problem: The EPS could be sending data to the program faster than the program can handle it (hence the problem with the second reception error). If this is the case, it would be the software developer's responsibility to adjust the reception timing.]

Dear TH:

It would be a money-saving favor to EPS users if Ensoniq could test some affordable hard and removable drives in addition to those listed in TH - such as the drives of companies advertising in the back of Mac User or Mac World magazines. For example, one can find a SyQuest 44 Mb removable for \$400 (which I'm interested in buying) and most of these companies have



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Pipe Organs 4 & 5	Drumulator Kit	Oberheim 4 - Matrix 12
Electric Organs	SP-12 Kit	MinMOOG - 1
Classic Hammond B3	Oberheim DMX Kit	MinMOOG - 2
"Dirty" Hammond B3	Sequential Studio 440 Kit 1	MinMOOG - 3
Farfisa Organs	Sequential Studio 440 Kit 2	Jupiter 8
Accordions 1 & 2	RK-5RX-7 Kits	Super JX/MKS-70
Vox Organ	LinnDrum Kit 1	Junio 60/106
Cello & Contra Bass	LinnDrum Kit 1	Prophet 10 - 1
Solo Violas & Violins 1	Simmons SDS 5 Kit	Prophet 10 - 2
Solo Violas & Violins 2	Marimbas & Kalimbas	Korg DW-8000
String Section 1	Vibes	ESQ-1
String Section 2	Xylophone	SQ-80
String Section 3	Mallets & Steel Drums	Kurzweil 250/1000
String Section 4	Glockenspiel & Bells	Arp Odyssey
String Section 5	Bells 2	Arp 2600
String Quartet	Typani & Kettledrum	Mellotron 1 - Strings
Pizzicato Violas & Violins	Triangles, Finger Cymbals & BellTraps	Mellotron 2 - Flute & Choir
Harps 1-4	Tibetan Bell	Chamberlin
Harps 5 & 6	Sound FX -	Modular MOOG
Classical Guitars 1 & 2	(1) Domestic Animals	MOOG Source & Taurus Pedals
Steel String Guitar 1 & 2	(2) Wild Animals	Memory MOOG
Jazz Guitar, Acous. Bass	(3) Cartoon FX	PPG Wave - 1
Mandolin, Kite & 12-String	(4) Car FX One	PPG Wave - 2
Trumpets 1, 2 & 3	(5) Car FX Two	PPG Wave - 3
Trombones 1, 2 & 3	(6) Transportation FX	Vocal Ensemble 1
Muted Trumpet, Tuba, & Flugelhorn	(7) X-Rated	Vocal Ensemble 2
Brass 1 & 2, & Classical Horns	(8) Military and War FX	Vocal Ensemble 3
Brass 3 & 4	(9) Household FX	Vocal Ensemble 4
Saxophones 1, 2 & 3	(10) Industrial FX	Vocal Ensemble 5
Saxophones 4 & 5	fairlight II Soundtrax 1	Voces & Vocoder
Bassoons & Contra	fairlight II Soundtrax 2	Rock & Roll Comp Set
Bassoons	fairlight III Brass 1	Jazz Composition Set
Oboes & Clarinets	fairlight III Brass 2	New Wave Composition Set
Flute, Pan Flute & Recorder	fairlight III Orchestra	Rag Composition Set
Exotic Winds	fairlight III Reeds	Jazz & P-Bass
French Horns	fairlight III Strings 1	Factor Basses
English Horn/Oboe D'Amore	fairlight III Strings 2	Rock Guitar 1
Bagpipes	fairlight III Vocals	Rock Guitar 2
Bantrone Horn & Euphonium	fairlight III Percussion	Heavy Metal Guitar
Sax Sections	fairlight III Orchestra hits	Jazz Guitar
Brass 5 & 6	fairlight III Orchestra hits 2	Funk Guitar
Drum Kits -	fairlight III Orchestra hits 3	Chapman Stick
1 & 2 - Studio Kit/Rock Kit	fairlight III Soundtrax 4	Synclav Hits 1
3 & 4 - Gated Kit/Power Kit	fairlight III Soundtrax 5	Synclav Soundtrax 1
5 & 6 - Live Kits 1 & 2	fairlight III Soundtrax 6	Synclav Soundtrax 2
7 & 8 - Live Kits 3 & 4	fairlight III Soundtrax 7	Synclav Soundtrax 3
9 & 10 - Electronic/Synth Kits	fairlight III Snare Drums	Synclav Soundtrax 4
Latin Percussion 1	fairlight II Sound FX	Orchestra Hits 1
Latin Percussion 2	Prophet 5 Strings	Orchestra Hits 2
Exotic Percussion 1	Prophet 5 Brass and Bass	KATONA Roto Organs 1 & 2
Exotic Percussion 2	Prophet VS - 1	KAT STacks
Assorted Kicks	Prophet VS - 2	KATONA Percussion FX
Assorted Snares	Prophet VS/18/2000	KATONA Tympani
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Assorted H. Hats	D-50 3	
Acoustic Kicks	D-50 4	

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excellent reputations. I have been trying to find out WHAT is tested and what may go wrong if I bought a removable from one of these companies. I am not interested in features such as shock-mounting, universal power, etc. I called Ensoniq and I was told that an untested drive MAY work just fine and that these products have not been tested simply because they have not been tested. Since damage by third-party products is a big issue in the warranty literature and the \$200 – \$400 price difference is rather significant for most of us, I think drives of companies such as APS, Mac Land, and Aurora should be tested as well.

On another point, I strongly believe that Ensoniq products deserve better-written and user friendly manuals. I don't want to play the unauthorized reviewer here and name specific items, but I would like to warn users about hastily-put-together third-party books sold for a lot of money, taking advantage of the manuals' weaknesses. It would save some people from getting ripped-off if TH could have brief reviews of these books.

Thank you and best wishes,
Semih Firincioglu
New York, NY

[CS – While Ensoniq does try to test any of the hard drives that come its way, it does not have the resources to support an ongoing, aggressive testing program. However, we've (Ensoniq and the Hacker) come up with an idea that might be of use to those of you considering making the purchase of a hard drive, and it is this:

SPECIAL OFFER

If you have any experience with the EPS or EPS-16 PLUS and a hard drive, let us know what that experience is. What drive(s) work or don't work for you? Drop us a line and let us know – it doesn't have to be anything fancy, just something like "I've been using a ROVCO 80 for 8 months now, without a problem," or "I tried the Hoovier 40, and couldn't get it to work." And be sure to let us know what you're using it with – is it an EPS, or an EPS-16 PLUS? Are you using the Ensoniq SCSI hardware, or another manufacturer's? And any other pertinent details. And that's all there is to it.

For our part, when we've received a sufficient number of responses, we'll collate and publish the results – along with any interesting anecdotes that might crop up. And we'll throw all the contributors' names into a dumpster and draw one – the lucky win-

ner will receive a free set of Ensoniq Signature Series sounds (your choice – compliments of Ensoniq) and one of the highly coveted Transoniq Hacker tee-shirts (compliments of TH). Along with the knowledge that you'll be helping to make mass-storage a safer place for countless generations of Ensoniq users. So keep those cards and letters coming, folks, and watch these pages for updates!]

[Ensoniq – We try very hard to write clear, easy-to-understand manuals for all of our products, and we have been commended for achieving those same results. But we realize that any effort can always be improved upon, and given the time, resources and complexity of a product we strive to keep improving. It would be more helpful to us for Hacker-ites to offer tangible suggestions, rather than general commentary. We do listen.]

[TH – A review of one of these third-party manuals may be found in this very issue.]

Greetings TH, fellow hackers.

I have a suggestion and some questions. The suggestion is for future OS updates on the EPS-16 Plus. When I am dealing with the alpha-numeric display and writing instrument names I think that it would be more efficient to have "A" appear when the Data-Slider ("Mr Knob," history of the term eagerly requested) is all the way down and "0" with the data-slider all the way up. As Mr Knob is slid up the display would progress: ABC...XYZ', *,1234567890. I always find myself wading through the numbers and symbols before I get to the letters. If you follow the above convention we could locate A and 0 quickly (at the extremes of the data slider movement) as good reference points for the letters and numbers.

Questions, 1) Can you tell us what all the new commands are for on the Analog Test page? 2) Where does the algorithm for the FX chip reside? As I understand it the data that is loaded into the FX chip may be divided into two categories a) the parameter data (the stored values for the user-accessible parameters of the algorithm) and b) the algorithm itself (the program/code that actually makes the chip produce the noises). When we load and store FX programs to and from disk are we just transferring the parameter data that then calls up the FX algorithm from ROM or does the actual software that drives the chip go with it? In other words, is it possible for Ensoniq to release a disk just full of FX algorithms, not

just tweaks on the ROM FX but completely new FX, i.e., "Pitch shifter," "Multi-tap-delay," "Resonator," etc. that require software not already in the EPS FX ROM?

Regards,
Scott Fisher [scott@wapsy.uwa.oz]
PH:(09) 380 3574.
Department of Psychology
University of Western Australia
Nedlands, 6009, Perth, W.A.

[CS – In the original layout for the ESQ-1, where all the various components were first diagrammed, the data entry slider was labeled "Mr. Knob" (primarily because one of the guys at Ensoniq was having a little fun). The term stuck, with engineers and designers using this somewhat less-than-technical appellation when referring to the slider. The name finally became immortalized when Mr. Knob made it into the analog test pages of the original EPS.

The new commands that show up in the EPS-16 PLUS are all related to tests for the ESP chip – the chip that's responsible for the digital on-board effects in the EPS-16 PLUS. If you decide to mess with any of these tests, proceed with caution. The analog tests really are not meant to be of any use to the end user and aren't really even supposed to be visible to him/her. It is possible to crash your EPS when monkeying around with this stuff. And while it is not possible to damage your unit, it is possible to cause it to send tremendous amounts of signal to its audio outs, and this might not be too healthy for your sound system – or your ears, for that matter.

The algorithm for the ESP chip resides in ROM, but it is also saved to disk (along with the parameter data) when you save an effect, and is re-loaded when you load the effect. Therefore, it is possible for entirely new effects algorithms to be loaded from disk, thus adding new capabilities to the signal processing section of your EPS-16 PLUS. Ensoniq assures us that they can and will release new effects algorithms for the EPS-16 PLUS in the future. And with all the development they've been doing on the new DP14 processor, they must have at least a few new algorithms laying around back at the factory.]

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Note: 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.

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PS Systems	All Models
Eltekon	All Models
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Microtech	R45, N20, N40, N80, N100, N150
PL1	45 Meg Removable
Mass Micro	Datapack 45

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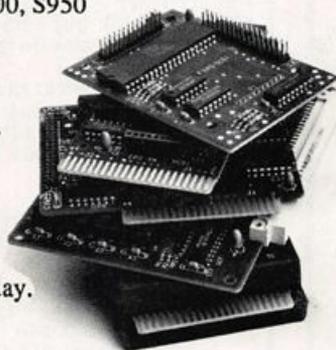
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