

# TRANSONIQ HACKER

*The Independent News Magazine for Ensoniq Users*

## Tuning Accuracy in the Ensoniq EPS

by Carter Scholz RC030823

Although the tuning display of the EPS shows a resolution of 1 cent, the true resolution of the instrument varies drastically from this figure, never exceeding a best case of 1.56 cents. Anyone who needs to rely upon the EPS's tuning accuracy should understand the following facts:

Pitch data is stored internally in the EPS to an accuracy of 1/64-th semitone, as can be seen from the system-exclusive "get/put tuning" messages, which use a resolution of six bits per semitone. (As of OS 2.40, these commands still don't work as documented.) Rich 1989 has observed that the cents display, which shows whole cents only, doesn't always stay where you set it, and this is why: it's rounding off to the 1.56 cents internal setting.

The next question is how well the EPS can deliver the internal setting. Like the Mirage, the EPS divides a master clock to generate its frequencies, producing a linear frequency scale which worsens in cents resolution as you descend. Hence, the tuning accuracy of the EPS must be measured in Hertz, not in cents.

The accuracy is further related to both the sampling rate and the number of voices (12, 16, or 20). The lower the sampling rate, or number of voices, the worse the tuning accuracy. [Note: available sampling rates on the EPS are integer (1-100) divisions of 625,000 Hz. Sampling rates above 48.1 kHz do not noticeably improve tuning resolution.]

I tested the EPS's resolution two ways, at a variety of sampling rates, and all possible voice settings, using a frequency meter with a resolution of 0.1 Hz.

### BEATING TEST (20 voices)

One note was tuned to a fixed frequency. A second note was tuned to the same

frequency, then incremented upwards until it changed in pitch. This established the minimum possible frequency separation available at that sampling rate. The actual frequency of the second pitch was recorded. This test was repeated at four different base frequencies (from 60 Hz to 2000 Hz), four different sampling rates, and for all three voice settings (12, 16, 20).

Sample rate	#Voices	Beat Freq
SR=6.25	12	7.7 Hz
	16	6.0 Hz
	20	4.8 Hz
SR=17.4	12	2.7 Hz
	16	2.2 Hz
	20	1.7 Hz
SR=39.1	12	1.3 Hz
	16	0.9 Hz
	20	0.8 Hz
SR=48.1	12	1.0 Hz
	16	0.8 Hz
	20	0.6 Hz

These results were the same for all base frequencies, excepting the highest. In the extreme treble range (above about 1,000 Hz), best-case resolution fell from 0.6 Hz to about 1.2 Hz, probably owing to the EPS's 1/64th-semitone (1.56 cents) internal storage resolution. In the upper octave of the keyboard, the EPS's resolution seems limited by the software.

### SCALE TESTS (20 voices)

To get a better sense of real-world accuracy, two scales were measured in Hertz at minimum and maximum sampling rates and with 20 voices. The highest octave of the EPS keyboard was measured so as to minimize frequency counter error. Cents error doubles for each octave down; e.g., at middle C, mean cents error for the harmonic scale at 48.1 kHz SR would be 2.56 cents.

## In This Issue...

### SAMPLERS:

Tuning Accuracy in the Ensoniq EPS <i>Carter Scholz</i> .....	Cover
Review: Syntaur's Mirage Disk #1 <i>Jordan Scott</i> .....	6
Pitch Bend & Mod Wheels on the EPS <i>Phil Rogers</i> .....	10
The EPS as a Learning Aid <i>Gary Dinsmore</i> .....	13
Review: Turtle Beach Sample Vision <i>Dave Nosek</i> .....	15

### SYNTHESIZERS:

Review: Music Software Exchange <i>David Libby</i> .....	7
Formant Shifting <i>Jim Grote</i> .....	9
Happy Birthday ESQ-1 <i>Al Goldberg</i> .....	17
VFX Patch Sheet <i>Sam Mims</i> .....	18
VFX Hackerpatch <i>Sam Mims</i> .....	20
SQ Hackerpatch <i>Sam Mims &amp; Contributors</i> .....	22

### GENERAL:

Random Notes .....	3
Hypersonic .....	3
Hard Drives List .....	11
Current O.S. ....	14
Classifieds .....	24
The Interface .....	25

## 12-TONE EQUAL-TEMPERED

	Desired	SR = 48.1 kHz		SR = 6.25 kHz	
		Meas	Cts err	Meas	Cts err
C	1046.5	1046.2	0.5	1047.4	1.5
C#	1108.7	1108.7	0.0	1108.2	0.8
D	1174.7	1174.8	0.1	1173.5	1.8
D#	1244.5	1244.3	0.3	1242.9	2.2
E	1318.5	1318.7	0.3	1316.8	2.2
F	1396.9	1397.1	0.3	1395.1	2.2
F#	1480.0	1480.6	0.7	1477.7	2.7
G	1568.0	1568.1	0.1	1568.9	1.0
G#	1661.2	1661.3	0.1	1660.2	1.0
A	1760.0	1760.0	0.0	1760.1	0.1
A#	1864.7	1864.3	0.4	1864.5	0.2
B	1975.5	1975.5	0.0	1977.4	1.7
C	2093.0	2092.3	0.3	2094.8	1.5
Mean Cents Error			0.24		1.45

## HARMONIC SCALE

	Calc	SR= 48.1 kHz		SR= 6.25 kHz	
		Meas	Cts err	Meas	Cts err
C	960	959.6	0.7	959.8	0.4
C#	1040	1039.0	1.7	1036.3	6.2
D	1120	1119.9	0.2	1121.2	1.9
D#	1200	1199.3	1.0	1197.6	3.5
E	1280	1280.1	0.2	1278.3	2.3
F	1360	1359.6	0.5	1359.0	1.3
F#	1440	1439.8	0.2	1439.7	0.4
G	1520	1519.9	0.1	1520.4	0.5
G#	1600	1600.0	0.0	1601.1	1.2
A	1680	1680.1	0.1	1681.7	1.8
A#	1760	1758.9	1.1	1758.2	1.8
B	1840	1837.8	2.1	1838.9	1.0
Mean Cents Error			0.64		1.86

## CONCLUSIONS

From this data a formula can be derived:  $R = 625000 / (SR * (V+1))$ , where R is the EPS's resolution in Hertz, SR is its sampling rate in Hertz, and V is the number of voices. No two frequencies can be closer together than R. This effectively sets up a gamut of available EPS pitches, separated by R hertz.

In real-world use, although the minimum separation of any two frequencies at the maximum sampling rate is 0.6 Hz, the maximum deviation from any desired frequency will be 0.3 Hz, and the average deviation will be about 0.15 Hz.

The data suggests that better accuracy might be obtained in the case of certain just tunings by carefully selecting a fundamental frequency to accommodate the EPS's resolution at the sampling rate used. For instance, at the 48.1 kHz sampling rate, a tuning whose frequencies lie somewhere close to the EPS's effective 0.6-Hz gamut should have a smaller mean error than an arbitrary tuning.

## REFERENCES

Rich, Robert. "Tuning Facilities in the Ensoniq EPS Sampling Keyboard". 1/1, 0v. 4, n.3.

Bio: Carter Scholz is a free-lance writer for Keyboard, Electronic Musician, and Music Technology, and has written science fiction. ■ R0030823

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# Front Panel

RND (♪♪♪)

## NEWS FROM ENSONIQ:

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### ZIP, BANG ZOWIE!

Those sound effects are coming from an EPS!

The Philadelphia Flyers goalie is outraged as he's sent to the penalty box and the sound of a baby crying floats over the bleachers. Other events are punctuated by cows mooing, doors slamming or similar editorial sound comments. The sound effects are coming from the organ booth of the Spectrum Arena in Philadelphia where two Ensoniq EPS's are loaded with all the appropriate sound effects for the day's sporting event. It's just one of several recent uses of Ensoniq products as a generator for high fidelity sound effects. Receiving national attention is also the use of the VFX by Claude Gaudette as a heartbeat in a recent Honda commercial.

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Check them out at your local dealer now! RC030823

## NEWS FROM HACKER:

The long-awaited VFX patch sheet makes its debut in this month's *Hacker*. Check out pages 18, 19, and 20.

\* \* \*

Your humble editor and publisher have gone and gotten themselves involved in another publication. If you're in the Northwest or at all interested in what's happening in the Northwest's visual arts, you may want to take a look at *NW Gallery*. It's available on many newsstands in the region, but if you can't find it, send us \$3 and we'll mail one off to you. (And we're NOT going to let this new venture adversely affect the *Hacker* in any way! There's several ways it might help - but we'll just have to wait and see.)

\* \* \*

Transoniq Hacker is typically on a 4-week, 4-week, 5-week schedule. You should receive the next issue (#56) in approximately 4 weeks.

## TRANSONIQ-NET

HELP WITH QUESTIONS

**ALL ENSONIQ GEAR** - Ensoniq Customer Service. 9:30AM to 6:30PM EST Monday to Friday. 215-647-3930.

**EPS QUESTIONS** - Erech Swanson, Maestro Sounds. 718-465-4058. Call anytime. (NY) If message, 24-hr callback.

**VFX QUESTIONS** - Sam Mims, Syntaur Productions. 818-769-4395. (CA)

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

**SQ-80 QUESTIONS** - Michael Mortilla, 805-966-7252 weekends and after 5 p.m. Pacific Time.

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**ESQ-1 AND SQ-80 QUESTIONS** - Tom McCaffrey. ESQUPA. 215-830-0241, before 11 p.m. Eastern Time.

**ESQ-1 QUESTIONS** - Jim Johnson, (602) 821-9266. 8 a.m. to 5 p.m. Mountain Time (AZ).

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## HYPERSOBIQ

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### CHANGE OF ADDRESS

Please let us know at least four weeks in advance to avoid missing any issues. The Post Office really will NOT reliably forward this type of mail. (Believe us, not them!) We need to know both your old and your new address. (Issues missed due to late or no change notification are your own dumb fault - we mailed them!)

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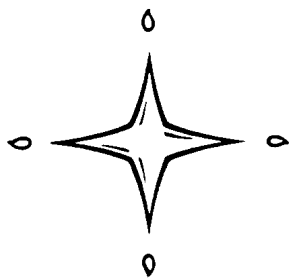
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# Syntaur Production's Mirage Disk #1

Reviewed by Jordan Scott

For: Mirage DSK, Mirage Multisampler.  
Product: Mirage Disk 1 (Synthesizer Samples).  
Price: \$7.95.  
From: Syntaur Productions, 11116 Aqua Vista #2, N. Hollywood, CA 91602.

There's good news for Mirage owners still coping with the 16-bit snicker. If Syntaur Productions (Hacker Sam Mims's company) has its way, you won't get mad, you'll get even with their first synthesizer disk for the Mirage (there's nothing more flattering to a 16-bit sample than to throw away those eight, extravagant ones and zeroes).

Jokes aside, we all realize there are many better sounding instruments than the Mirage these days, but when you're short on VFX or EPS voices, there's no more affordable way to fill in arrangements than with a used Mirage. Add an inexpensive digital reverb and those 8 bits sound even better. The new synthesizer disk from Syntaur includes Mirage simulations of three VFX sounds, 2 MiniMoog bass sounds and a DX7 slam bass sound.

Speaking of reverb, the three Syntaur VFX sounds on this set were sampled with the full F/X as on the original programs. Depending on your point of view this can be good or bad. Upper bank 1 includes a 64k sample of the VFX Breathy Flute. The sample is plenty long to capture the richness of this classic wavetable synth sound. Upper bank 2 called Breathy Voices reminds me of the dark voice made classic in the early 70's by the mellotron. This sample is probably a little grungy for most people's taste, but I like it just the same. Finally, Upper bank 3 captures the punch of the VFX funk guitar. All three sounds are worthwhile and are highlighted well in the included sequences. If you avoid sustaining notes and use the generally short program envelope settings, you'll have no problem.

You will have problems however, if you're finicky about clean loops. These VFX sounds swathed in reverb and chorus are just loop nightmares for the Mirage. Upper bank 1's Breathy Flute tries and fails with a one page loop which glitches and is slightly out of tune with the rest of the sample. This isn't as bad as it sounds because the sample is long enough so that most notes will play out before you hit the loop.

The Breathy Voices fair a lot better as the loop glitch is hidden efficiently by the low filter settings (higher velocity playing will open up the filter and reveal the pop). The VFX Funk Guitar sample is not looped, but in most cases you'd probably want short rhythmic phrases which don't require a loop. Just the same, I'd like a loop to create new sustained-type sounds using the Mirage's synthesizer section.

The Syntaur disk splits the keyboard with the three lower banks. These samples include classic synth bass sounds (all of which are looped efficiently). Lower 1 is the straight Mini-moog bass sound. All samples feature four program variations, with Moog program 1 giving us a full and punchy synth bass. Program 2 is chorused and sustains extremely well. Other settings include slow amplitude release juxtaposed with a quick close of the filter.

Lower 2 combines a Moog bass with an ESQ-1 Slap-bass.

As the differences between banks Lower 1 and 2 are not great in a musical context, I would've rather had a VFX string sound for the same money. Finally, lower 3 gives you the ever-present DX-7 Slam-bass. Now you already have how many DX bass sounds and do you need another? The answer here is yes, you should have this all purpose bass sample. The loop works well by moving smoothly from the crisp sample into the pulsing vibrato of the two-page loop. Syntaur has also come up with four useful variations to go along with the sample.

It's great to see a new synthesizer disk for the Mirage, and unless you're using Soundprocess, you're pretty much on your own to find new synth sounds for your Mirage. On the whole, I can live with some of the loop and 8-bit problems in these Syntaur samples. At the down-to-earth price listed above, you really can't go wrong. And if your friends still snicker at you, just remind them the VFX III is just around the corner!

*Bio: Jordan Scott is an Operations Supervisor at IDB Communications's Satellite Earth Station in New York. He has contributed to Music, Computers and Software Magazine and created several synthesizer disks for the Mirage. His home studio includes those sibling rivals—Mirage and EPS. The EPS is jealous of the Mirage's Soundprocess software and wants one too.* ■ RC030823

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# Music Software Exchange Patches

Reviewed by David B. Libby

For: ESQ-1, ESQ-M, SQ-80.  
Product: 1600 patches.  
Price: \$32.00.  
From: Music Software Exchange, P.O. Box 533334, Orlando, FL 32853-3334.

Boy, did I ever groan when I opened the latest package from our fearless editor and found one thousand and six hundred sounds to critique. I tend to shy away from large patch collections simply because it takes so much time to wade through every sound, and there are inevitably hundreds of filler sounds. This collection is no exception.

The Music Software Exchange (MSE) has been around since 1987 and is in the business of distributing public domain software which can only be sold at a price that recoups operating costs, not at a profit. They list their sources as Compuserve, PAN and GENie, so if you've been aggressively collecting patches online, you might conceivably have most or all of these patches. Even for those poor backward souls (like me) who haven't downloaded a single sound, there are a lot of all-too-familiar names like 3TRUMS, SOFSWE, PLKBRS, BL PNO, BNGVOX, ROTARY, +DRUM4, etc., etc. There are patches that MSE says were commercially available, but were released to the public domain after demand died down, or were never marketed for various reasons, or simply donated to the public by their authors.

I was thankful I had an SQ-80 to run the supplied 3.5" disk because of the time involved in loading forty banks, but this collection utilizes only the 32 waveforms of the ESQ-1 and ESQ-M. A cassette tape is available for ESQ-1 owners, and there is an instruction sheet on loading banks. There are four categories of patches: acoustic/synthetic instruments, effects, acoustic/synthetic basses, and percussion. All of the patch information is organized in a plastic spirally-bound notebook, first by bank, and then alphabetically. Each patch is identified as to its category, there being 1147 patches of instrument/playable(sic) sounds, 98 basses, 286 effects, and 69 percussive offerings. There is space for notes on each bank in the first section, but no programming information for individual sounds such as we have come to expect with smaller compilations. I suppose it was enough of a chore to merely assemble an offering of this size.

The banks start off with some decent FM emulations, and proceed through mixed banks including some lower register pianos that uniformly tend to fall off at C5. I kept track of sounds that I had to have, and after four banks, had marked eight patches, which isn't too bad. Bank 5 & 6 weren't exciting, except for a dyno PIG. Banks 7 & 8 contain lots of Rhodes and more organs than anyone needs. Bank 9 was heavy on basses, and 10 was a mixture, with one more sound I had to have, QUAKER. There was a long, dry spell through bank 22, still, though, with nine sounds I marked as keepers. Bank 23 I noted as "mostly dogs." Bank 24 had VOICE1—VOIC10, but were primarily attack and filter variants. The quality seemed to fall off after this, with not much to my taste through bank 39, except for six patches I circled as worth keeping. Bank 27 did have one patch I punched up with high

expectations, JANE, but it turned out to be a weak effort at programming, name notwithstanding. [Ed.—NOT mine!] Bank 40 was CP's, EP's, and MUEP's. I got rid of my CP-70 because I didn't like the sound, so why would I want a patch that recalls it? I also ran across several sounds layered with \*CART\*, which seems to indicate that no tweaking was attempted on these patches.

All in all, I found twenty-eight patches as worth adding to my own personal collection, and I now have a large well to dip into for just about any sound I might need in the future, so while I might sound negative as to the quality of this compilation, overall it was as one could expect for a collection this immense.

All software is guaranteed by MSE to be readable, and this guarantee is either 30 days or 60 days, depending on which sheet you read. The cost is \$32.00, which includes first class postage. Specify format (ESQ-1, ESQ-M, or SQ-80) when ordering.

*Bio: David is a thirty-four year old independent CET eking out a living in the wilds of Southern Indiana. He claims to still have most of the parts to his original '75 MiniMoog in a box somewhere.* ■ RC030823

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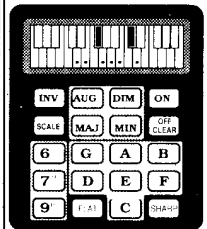
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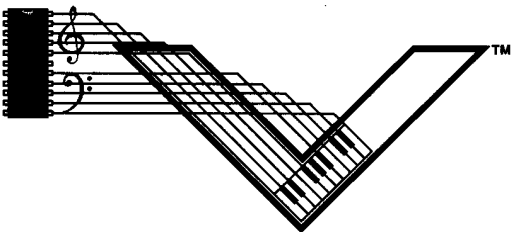
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# Formant Shifting

By Jim Grote

I would like to introduce the concept of "formant-shifting" on the ESQ-1 and SQ-80. This technique should open up a lot of new possibilities for sounds. I discovered this idea when I noticed that a note played with the pitch wheel bent down an octave sounds significantly different than simply playing the note an octave lower on the keyboard. The pitch wheel modulates (bends) the oscillator which is totally different than playing different notes.

To see what I'm talking about, do this: RC030823

1. Go to the Master Page and set bend range to '12'.
2. Select the factory preset, "MIXED".
3. Play a chord like C major at middle C.  
This is the normal "MIXED" sound.
4. Now pull the pitch wheel towards you all the way down.
5. While holding the pitch wheel down, play the same chord one octave higher,

Now you've got a completely different choir sound, but still the same notes. It's a deeper, less airy sound. It has more of a synthetic tone to it. In effect, you have a completely new waveform.

The way to program the pitch wheel modulation into the sound is to use an envelope to pull the oscillator down, and then transpose it back into tune using the SEMI and FINE controls. What this process is doing is shifting formants. A formant is a dominant frequency which gives character to a particular sound. This technique can shift this formant frequency up or down while leaving the keyboard in tune. (Middle C is still middle C.) Not all of the ESQ-1 waves have a characteristic formant frequency, but the ones that are good candidates for experimentation are VOICE1, PIANO, BASS, the FORMANTS, and so on. As a side note, VOICE2 is essentially VOICE1 with a slightly higher formant frequency. I don't own an SQ-80 but I'm sure there are many possibilities for formant-shifting on this synth, such as the string, breath, and chuff waveforms.

I've included a patch demonstrating my idea. CHOIRX is composed of VOICE1 waveforms that are formant-shifted down giving it a unique timbre. Program it in and then compare it to MIXED. As you can see, I used ENV3 to pull down the oscillators about nine semi-tones, then transposed them back into tune with the SEMI and FINE controls. You can do the same thing to other sounds like PIANO1. Try some experiments.

To demonstrate that great minds think alike, my formant-shift concept is similar to the famed TransWaves (tm) which the VFX brags about. Each TransWave (tm) is actually a bunch of different waves which are variations of a sound. A lot of these variations are formant shifted waves. For example, the voice TransWave (tm) is actually a bunch of voice wave cycles which have different formant frequencies. (Note .... this is a general approximation and not the exact scientific explanation.) The big difference is that on the VFX, the TransWaves (tm) (i.e. formants) can be dynamically shifted and changed as the patch is being played.

As a matter of fact, my formant-shift idea can even be applied

ESQ-1 PROG: CHOIRX										BY: JIM GROTE	
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH			
OSC 1	0	9	14	VOICE1	LFO2	+1	ENV1	+63			
OSC 2	0	9	13	VOICE1	LFO2	+2	ENV1	+63			
OSC 3	0	9	10	VOICE1	LFO2	-1	ENV1	+63			
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH					
DCA 1	60	ON	ENV2	+63	OFF	-					
DCA 2	60	ON	OFF	-	OFF	-					
DCA 3	60	ON	OFF	-	OFF	-					
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH				
FILTER	0	0	43	ENV4	+43	ENV3	+63				
	FINAL VOL	PAN	PAN MOD	DEPTH							
DCA 4	58	9	LFO3	+30							
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD			
LFO 1	24	OFF	ON	TRI	0	0	63	WHEEL			
LFO 2	21	OFF	ON	TRI	0	63	63	LFO1			
LFO 3	10	OFF	ON	TRI	63	63	63	OFF			
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK	
ENV 1	-19	-19	-19	0	0	0	63	63	63	0	
ENV 2	+63	0	0	0	0	0	38	1	42	0	
ENV 3	+63	+63	+63	0	0	14	50	63	43	9	
ENV 4	+61	+60	+55	13	17	25	24	63	31	0	
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC			
MODES	OFF	OFF	OFF	0	ON	OFF	OFF	OFF			
	SPLIT/LAYER	S/L PRG	LAYER	LAYER PRG	SPLIT	SPLIT PRG	SPLIT KEY				
	OFF	-	OFF	-	OFF	-	-				

to the awesome VFX sounds and samples. Sampled sounds like strings, French horn, and grand piano could be formant-shifted, giving even the powerful VFX an enormous increase in tonal range and diversity. I can't wait to try this out when I can scrape up enough bucks to afford one, or hopefully get the incredible VFXsd.

Okay, now a little bit about myself. I'm currently a junior in Electrical Engineering at the University of Cincinnati, learning about the silicon brains behind music technology and synthesizers. Hey Ensoniq, how about a job after I graduate? Anyway, I spend 99% of my free time holed up in my four-track studio composing and jamming. I'll list some things I co-own with a friend of mine. We have an ESQ-1, a Tascam Porta-Two four-track, a MidiVerb II, a MidiDisk, and I have the Roland R-8 drum machine. My all time favorite composer/musician is Isao Tomita who's a genius on the synthesizer. My favorite band is Emerson, Lake, and Palmer.

Anyway, I hope this article is informative, giving you new ideas for sounds. Maybe this will breathe some life back into the ESQ-1 before it drowns in obsolescence. ■

# Using The Pitch Bend And Mod Wheels With The EPS Automated Mixer

by Phil Rogers

One of the advanced features that makes the EPS so valuable and enjoyable to work with is the automated mixing capability built into its sequencer. For instance, after you've recorded a few tracks of a sequence—say the bass guitar sounds too faint in the mix—then all that needs be done is go to the EDIT/Sequence page to set the RECORD MODE to ADD, go to the EDIT/Track page to set the MIX (volume) to one you think you'll like better, then, while holding the RECORD button, press the PLAY button. After the first bar of the sequence, press STOP. If you don't like the result, use the left cursor button to underline KEEP:OLD, press Enter-Yes, and then you can repeat the procedure as many times as necessary until you get the mix that moves you. When you get the thing to click, make sure KEEP:NEW is underlined and press Enter Yes. Now whenever you have the EPS play that sequence, your new mix will be intact, providing of course you save this version of the sequence to disk—otherwise it will be gone when you turn the power off. Save sequenced material every time you do an update on it that you want to keep—just in case you get one of those nasty error messages telling you that you have to reboot. RC030823

In SONG mode things get even juicier—you are able to do fade-ins and fade-outs while recording a song track, and the sequencer remembers them—just press RECORD and PLAY buttons as before, again with MIX showing on the EDIT/Track page. Move the data entry slider to the mix level you want the track to start at. When the song starts to play, work that slider to your heart's content. Of course, the song track can be recorded without volume fades, which can be added later. Again, make sure the sequencer is in ADD mode. And note that a little bit of planning is helpful when doing song track fades, since all material recorded previously on that instrument's track (i.e. from all of the sequences in the song setup) will respond to the changes in volume which you are carrying out on your song track. And you had better get your song track fades right the first time though, because if you try to re-do a mix at this level, the instrument simply ignores all of your efforts. You have to record the entire song track over again in order to try and re-do the fades—not a pleasant thought if you were really cooking when you played that great lead part. Yes, it's kind of annoying to think you have to go into [COMMAND/Track/Event Edit Track] and write down all of the note values, clock positions, velocities and durations so that after you [COMMAND/Track/Event Edit Track] you can re-enter them so you'll have your song track without the fades. That's what would be necessary if you'd cut the perfect song track and aren't at all sure you'd be able to recapture the feeling on another take.

So it's probably a good idea in many instances to record the good old song track without the fades. Then you can ADD them and if they don't sound good enough during audition, make sure you press Cancel No with KEEP: NEW showing. Don't ever keep 'em unless they're all right, because you'll be stuck with them, unless you want to go through the [COMMAND/Track/Event Edit Track] tedium I mentioned above.

It just so happens that you can also add pitch bending, as well as any effect you can control with the mod wheel, the volume/mod pedal, or other external controller, to an already

recorded track. The setup is similar to the one above, only instead of the data entry slider, your hand would work one or both of the wheels, or your foot would be jammin' on the pedal, etc. You can put in one effect at a time—either do a second... third... or fourth ADD, or go through the sequence several times in LOOPED mode [EDIT/Sequence Song/Record Mode =Looped], adding a different effect from a different controller each time through. If you have set up your patches such that dynamic stereo panning is controlled by the mod wheel as in Bryce Inman's "Panning for Gold on the EPS" (TH, April '89), your EPS will function like an enhanced "Portastudio" that remembers and adds complex volume fades, panning, and/or any other effects you have programmed to be modulated by the wheel, the pedal or another external controller. For hints on this kind of programming, besides Inman's article, for starters I would recommend Gary Dinsmore's "Seventeen Things to Do with Envelopes" in the same issue of the Hacker; "Power Layering Memory Savers, Looping Tools & More on the Ensoniq EPS" in the May '89 issue of Keyboard, written by Kevin Elliott and Clark Salisbury; and Ferro Technologies' "The Sampling Book," written by Steve DeFuria and Joe Scacciaferro and distributed by Hal Leonard Books.

Getting back to basics. If you've recorded a track that sounds perfect except maybe you overdid it with the pitch bend on one note you don't necessarily have to re-do the pitch bends for the entire sequence. Go to [COMMAND/Track/Event Edit Track] and press Enter-Yes. Choose the bar or bars where the offending bend or other effect is located. Select the controller to be erased (PITCH WHEEL, MOD WHEEL, etc.). Press Enter-Yes and the glitch is gone, though you can audition the NEW versus the OLD as with an overdub. Note that if the mod wheel is set up to fade between different instrument sounds in two or more different layers, that when you erase the controller data, any notes which were playing the sounds of the layer(s) assigned to the wheel in its "up" position will default to the sounds of the layer(s) assigned to the wheel in its down, or neutral position. At that point, simply re-do the effect if you wish.

You may run into a situation where one of your pitch bends runs over into the next bar. If you only take the bend out of the bar in which the key(note) was struck, when you play back the sequence, there will be a jump in pitch from the first to the second bar since the pitch bend is still activated in the second bar. In most instances this is not what what you'll want to be hearing. Here it's necessary to take out two or more bars, since there is no way for the EPS to erase controller data note for note (other than for some velocity crossfades, which is a different ball game than we're playing here). So if you're using a lot of bending in a given track, you may not be able to find a way to bracket the offending note within the confines of one or more bars without adversely affecting other, "well-bent" notes. In this situation, the better option is to go to [COMMAND/Track/Event Edit Track] and take out the offending note (see pp. 65-67 of the *Advanced Applications Guide* and/or pp. 32-33 of Gary Dinsmore's *The EPS Users Guide*). Then go back to EDIT/Sequence (still in ADD mode) and re-record the note, bending it the way you like it. Easy enough?

When you go to use one of the wheels on a song track it's likely that at some point you'll encounter the following anomaly (some might even call it a bug in the software): OK, so you're adding pitch bend or mod wheel effects to an already recorded song track, right, and one of the notes towards the end of "Sequence 4" is having the effect added to it, specifically. It just so happens that this is a long-held note and thus it carried over a few beats into "Sequence 5" as does the pitch bend (or whatever) that you are adding to it. Everything sounds really good while you are carrying out the operation, and you can hardly wait to play it back and listen to it. With KEEP:NEW showing, you press PLAY, and WHOA, IT SOUNDS TERRIFIC! that is, right up until the beginning of "Sequence 5," where the controller effect drops out. When this first happened to me, it was pretty disconcerting. I assumed the worst: that the mod/pitch wheels have to nudged ever so slightly at the very beginning of "Sequence 5" in our arbitrary song setup in order for the held note at the end of "Sequence 4" to keep being modulated into the beginning of "Sequence 5," i.e., in order for the controller to be activated in the second of the two sequences. I didn't think it was possible to quantize the modulation or to "shift the modulation by clocks," and I certainly don't have superhuman chops in order to eliminate the blip in my track where the controller value reverts to neutral for a fraction of a beat at the beginning of "Sequence 5."

I further assumed I would have to erase the song track (groan) after having written down all of the note data found in EVENT EDIT TRACK (double groan), append "Sequence 5" to "Sequence 4" (see [COMMAND/ Sequence Song/Append:Sequence]), rename the enlarged sequence something like "Sequence 4+5" (see [COMMAND/Sequence-song/Rename Song-Sequence]), erase the now-redundant "Sequence 5" from the song setup (see [COMMAND/ Sequence-Song/Edit Song Steps]), and finally, re-enter the note data for the song track into "Sequence 4+5" one note at a time via EVENT EDIT TRACK before re-adding the controller effects in [EDIT/Sequence Song/ Sequence 4+5].

Fortunately, folks, it turns out that the bug is not as big a thing as it at first seemed to be. All of the time that I'd been groaning while listening to my dropped-out modulations with KEEP:NEW showing, I'd never pressed the Enter-Yes button. It turns out, in fact, that the modulations do get recorded, unscathed, on the song track, but it fools you because the track does not audition correctly. If, however, you do press Enter-Yes and then press PLAY, you'll hear your track, complete with controller effects, just the way it sounded while you were recording it. We've already mentioned that we can take out a note or erase the controller if you don't like the way things sound. Gradually your track will take shape. Of course you could hit everything right the first time through, which is just that much better.

One other important point: if you are making use of a keyboard split, say, with your rhythm guitar playing chords at the bottom half of the keyboard and your lead guitar soloing on the top half: don't expect to be able to use the effects wheels and/or pedal for the lead guitar line without having the rhythm guitar executing those same pitch bends and other modulation effects when the two instruments are playing at the same time. It won't happen. You'll have to copy the instrument to another of the eight instrument locations (this operation uses very little memory) in order to record your lead and your rhythm parts on separate tracks. This is a good idea anyway, especially if want to add a different outboard effect to each via the output expander unit, that is, if you have it or plan on getting one later.

OK then, all you modyoulaters, it's about time fer me to be facin' some more of the music thang, before I start decomposin', ya know? So floor them modyoulayshun pedals, and get dem pitch wheels rollin'!

*Bio: Phil Rogers lives in Ann Arbor, Michigan, and presently is at work on the first of many cassette albums of original music. The EPS is his first programmable keyboard. ■*

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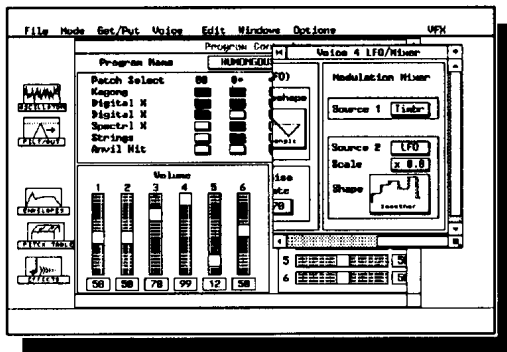
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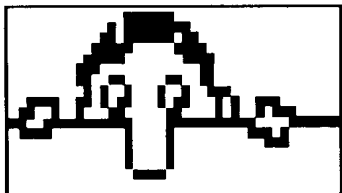
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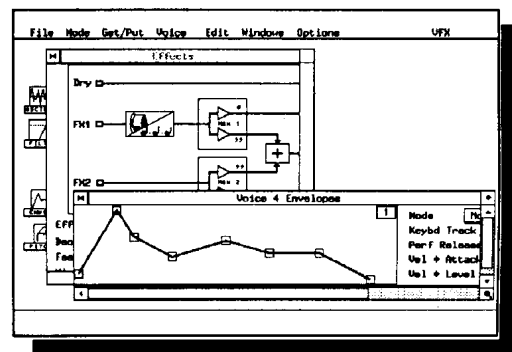


# Oview



VFX global parameters can be saved and loaded at will, including pitch tables, effects and multisets. A delay calculator is provided so you can match envelope and delay times as a function of tempo. VFX<sup>SD</sup> owners can save and load sequences either alone or as a bank.

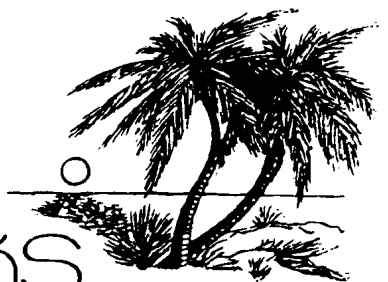
Oview/VFX's user interface is **designed by you**. That makes sense to us, since you are the user, right? You define up to 10 "views" that are assigned to function keys. Changing your perspective is as easy as pressing F10.



The list price for **Oview/VFX is only \$169**. If you'd like to see firsthand what we're talking about, we'll send you a **free demo disk** of Oview just for being our friend. Call or write, specifying your computer's graphics card and diskette size. RC030823

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# The EPS as a Learning Aid

by Gary Dinsmore

In this article we will explore a novel use of the EPS - using it as a random access tape recorder to help a student memorize lessons.

My wife and I are saving for a trip to France in 1992. We decided to learn French, and purchased a tape of French phrases. This was all well, but tape recorders are very sequential, and I got tired of running from one end of the tape to the other to find the desired study segment.

The EPS is in one sense a recording machine. So I explored the concept of recording excerpts from a language learning tape. These clips were assigned to sequential keys, and set up in two layers. Each phrase to be learned was recorded into layer 1. This clip contained the phrase in both languages. It was copied to layer 2, and the sample start and stop adjusted so layer 1 only accessed the English, and layer 2 only accessed the French. The patch select was set up to play layer 1 with no patch select buttons pressed. The default setting for patch 2, 3 and 4 allows the left button to select layer 2, the foreign language, the right button selects the English equivalent and both buttons play both phrases simultaneously.

Here are step-by-step instructions for how to do this:

1. Set up your tape recorder to play from its playback output to the EPS "Audio In" jack. I was able to just disconnect one of the stereo pairs, and was able to still monitor the tape output to find the correct segment. RC030823

2. Create a new instrument by selecting "Command Instrument" and selecting "Create New Instrument." Press "Enter-Yes" and select an instrument button and press "Enter-Yes" again. Press the "Edit Instrument" buttons and change the "OO Patch" settings so that only layer 1 plays. If you check the OX Patch settings it will also play layer 1, XO will play layer 2 and XX will play layers 1 and 2.

3. Press "Sample" and the EPS will offer you a "New" layer and a "New" wavesample. Press "Enter-Yes" and the EPS will drop into the sample mode and display a level bar. Scroll right to the "Sample Rate" display and use the down button to run the sample rate all the way down to 6.25 kHz. This will be all the fidelity you will need for languages. For recording from a tape machine the default "Line" setting three pages to the right is the correct setting. If you record live from a mic, you will need to select "Mic" on this page. Now scroll back to the level bar page and you are ready to record.

4. Run your tape machine back and forth until you have the desired segment located. Play it through several times and adjust the tape output level until the "AMP" indicator does not light yet the volume is as high as possible. Get the tape to the exact starting place, and put it on pause.

5. Press "Enter-Yes" to initiate the record mode. The EPS will not start recording until the first word from the tape is pronounced. Release the tape machine's pause button, and as soon as the phrase has been spoken in both languages, press the "Enter-Yes" button to end the recording. Stop the tape machine.

6. Press the desired root key as requested in the EPS display. I simply started with C2, and gradually worked my way up the keyboard. Since you will run out of memory long before you run out of keys, you might as well just use the white keys also.

7. The EPS drops you in the "Edit Wave" mode, and the default setting is "Forward No Loop." This is correct, so don't change it. Scroll right two pages until the "Sample End" page is displayed. Pull the percent wavesample entry down with the data slider while you stroke the root key until just the first language phrase is spoken.

8. Change to the "Command Layer" mode and select "Create New Layer." Press "Enter-Yes" and this will create layer 2.

9. Change to the "Command Wave" mode and select "Copy Wavesample." Press "Enter-Yes" and you will be asked "Unnamed Inst" (at least until you name the instrument). Press "Enter-Yes" again and you will be offered "Layer 2," or if not you will be able to scroll up or down to layer 2. Press "Enter-Yes" again and you will be offered a choice of "Params Only" and "Params+Data." Select "Params Only," and press "Enter-Yes" one last time. The EPS will respond with "Wavesample 2 created."

10. Press the "Edit" button, and make sure layer 2 and wavesample 2 have been selected. Now press "Edit Wavesample" and move the "Sample End" back to 100%. Scroll left to "Sample Start" and move the percent entry until the second language phrase starts just as you press the key down. Scroll right to the "Sample End" again and pull the end percent down until the end of the phrase is just clipped, then back until it is all spoken.

11. Press "Command Wavesample" and scroll to the "Truncate Wavesample" page. Press "Enter-Yes" and the excess wave data will be removed, and you will use minimum memory.

12. Now put in a disk with room for this instrument, and save it. Press "Command Instrument" and scroll to "Save Instrument." Move through the name offered, "Unnamed Inst" and change it to something meaningful like "French 1."

At this point the phrase will be repeated all up and down the keyboard at higher and faster rates. However, if you repeat steps 3 through 7 and steps 9 through 12, moving up a root key each time you record a new phrase, you will eventually develop a section of the keyboard that has a different phrase attached to each key.

There is one more step to enhance your learning. Take the accompanying phrase book, and create some 3 x 5 flash cards with the phrases printed on opposite sides, and the key to which they are attached. Studies have shown that the more ways you handle information you are trying to learn, the better you learn it. You have now set up to listen and look at the data. You have also worked with the recordings and written the phrases. To effectively use the EPS-flash card system, look at the English (or other native language) phrase on the card and play the same phrase on the EPS in the new lan-

guage. (You can lock in the new language by pressing the left patch select button and touching the instrument button at the same time.) Say the phrase yourself, and then press the key again. Compare your pronunciation to the recorded phrase. Stroke the key again and again, saying the phrase out loud each time until you can duplicate the sound of the new language. Press the right select button any time and play the key to hear the phrase in your own language, or press both buttons to hear both phrases simultaneously.

You can do one more nifty trick to enhance this last effect. Press the "Edit" button and select layer 1 and leave the cursor under the layer. This selects "All" wavesamples. Now press "Edit Amp" and scroll to the "Pan" page. Pull the data slider all the way down to move all layer 1 wavesamples to the left speaker. Again press the "Edit" button, and select layer 2. Press "Edit" again and pull the data slider down, then up just until the asterisk is all the way to the right speaker. Now you have one person speaking one language to your left, and the other person speaking the other language to your right. And of course they can both speak at the same time.

Well as I promised, it is different. By the way this ought to be just the ticket for an enterprising young student to convince the "Old Man" that the EPS would be just the ticket to help the sagging grades in Latin, organic chemistry or just about any subject where vast quantities of data must be memorized. Don't refer him to me, however, cause I will probably go on for hours about what a super musical system it is and blow your cover. ■ RC030823

## BACK ISSUES

Back issues are \$2.50 each. (Overseas: \$3 each.) Issues 1-9, 11, 13-23, 27, 29, 30, 36, and 38 are no longer available. Subscriptions will be extended an equal number of issues for any issues ordered that are not available at the time we receive your order. ESQ-1 coverage started with Issue Number 13. SQ-80 coverage started with Number 29, (although most ESQ-1 coverage also applies to the SQ-80). EPS coverage started with Number 30. (But didn't really get going till Number 35.) VFX coverage got started in Number 48. Permission has been given to photocopy issues that we no longer have available - check the classifieds for people offering them. Reprints in our "Quick and Dirty Reprint Series" are available: MIRAGE OPERATIONS, for \$5, and MIRAGE SAMPLE REVIEWS for \$4. Each contains material from the first 17 issues.

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EPS-M	2.4	X	
MASOS	2.0	X	
MIRAGE	3.2	X	
ESQ	3.5		X
ESQ-M	1.2		X
SQ-80	1.8		X
VFX	2.0		X
VFX-SD	1.30		X

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# What's New from the Turtles?

## Sample Vision Sample Editing System and the DP8 Playback Port

Reviewed by Dave Nosek

For: EPS or EPS-M and other samplers and IBM (compatibles), MS/PC-DOS and the Yamaha C1.  
Products: Sample Vision software/DP8 Digital Playback Port.  
Prices: Sample Vision \$349 list (demos avail. call), DP8 \$95.  
From: Turtle Beach Softworks, P.O. Box 5074, York, PA 17405,  
(717)-757-2348 FAX (717)-755-9402

Sample Vision is a wavesample editing program for IBM and compatible computers that will let you manipulate your wavesamples from your sampler on your computer. I have to say that this program is definitely "eye candy" as well as a very needed program for sample editing. Sample Vision works with the following samplers; Akai S700/X7000/S900/S1000, Casio FZ-1/FZ-10M, Ensoniq EPS/EPS-M/Mirage/DSK, Emu Emax, Korg DSS-1/DSM-1, Oberheim DPX-1, Roland S-10/MKS-100/S-220/S-50/S-330/S-550, Sequential Circuits Prophet 2000-2002, 8-14 bit Sample Dump Standard devices, 15-21 bit Sample Dump Standard devices and the Yamaha TX-16W. What's really nice about the support for all of these different samplers is the fact that if you own 2 or more different samplers you can transfer samples between them. RC030823

Sample Vision must be run from a hard disk and it requires that you have at least 640K of memory, a Hercules, EGA or color graphics compatible adaptor card and monitor, a Roland MPU-401 or compatible MIDI interface and a mouse is very strongly recommended. (It's a must.) The Turtles put a lot of work into developing this program. Would you believe about 1 1/2 years! The program can also utilize your math coprocessor if you have one installed which will substantially speed up an already fast program. Installation is a breeze and takes only a couple of minutes by following the installation prompts. I should mention that you can also select other MIDI ports to use other than the standard Out 1 and In 1 if desired.

Sample Vision operates in a GEM based graphic environment with LOTS of pull down menus which make the program not only appealing, but easy to learn or use. You just point and click your mouse to what task you want the program to do. There are keyboard shortcuts written in as well (about 38 of them) which do save time. There's a lot to cover on this program so I'll be as concise as possible recommending that you give the Turtles a call for a free demo of the program.

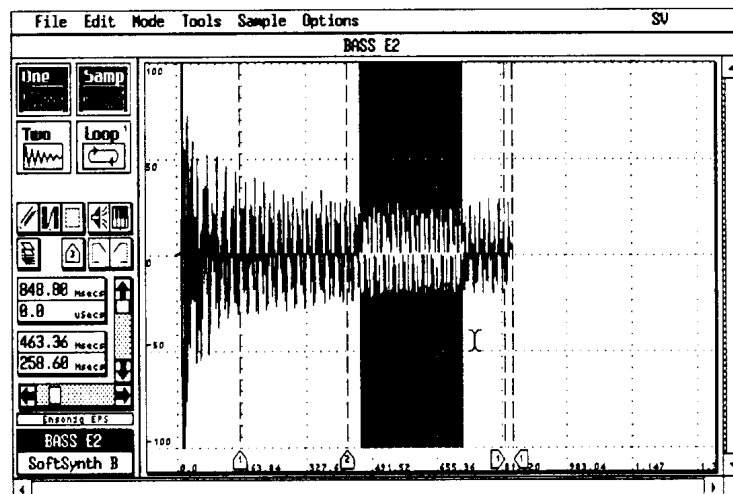
### Getting Your Sample Into Sample Vision

There are notes in the appendices of the manual which give you details as to any specific instructions that you must give your sampler before attempting to load a sample into your computer. For instance, on the EPS you naturally have to make sure you first of all have a instrument to edit in the EPS and to set the MIDI SYSEX to ON. For basics, that's it. Just make sure to stick your O.S. disk back in the EPS before proceeding to get the sample. Then pull down the Sample menu from Sample Vision and select "Get from Sampler." A dialog box asks you what instrument bank and which layer you wish to edit as well as what key. A status box appears on the screen showing how the transfer is proceeding. In a couple of seconds it's transferred! If you have EGA your eyes now pop open! The wavesample is now illustrated on your computer screen for processing.

### Let's See What's On The Menus

There is a FILE MENU that performs disk functions like New which clears out any sample that you've been working on. Open that

does just that, opens a sample file that you have stored on your hard disk. Save, Save As, Delete and Quit are self explanatory. The Edit menu has lots of goodies like Undo that will undo your most recent action (you screwed up and get saved). The Cut function removes a selected area from the active soundfile and saves it in a "Cut Buffer" which is available for later pasting if desired or if you cut or copy another sound. The Trim function leaves a selected area of the sample intact and just deletes (it's gone) the part of the sound you wish to trim. Copy and Paste functions work just like Cut but leaves the selected area intact. It's put in the buffer for future pasting. This is pretty cool as you can paste a sound from a different sound file to the one your working on. This makes for some interesting sounds! Mix Paste takes the sound from the cut buffer and mixes it with the sound in the selected area. You can specify the percentage of the cut buffer and the resulting soundfile is automatically normalized. You may get some clicks by doing this, but you can jump over to the Smooth Splicing option in the Options Menu to correct. You can also set the Cycle Size by animating the wavesample (like an oscilloscope). This tells Sample Vision how many samples are in one cycle of the sample so it know the the sample rate and cycle size.

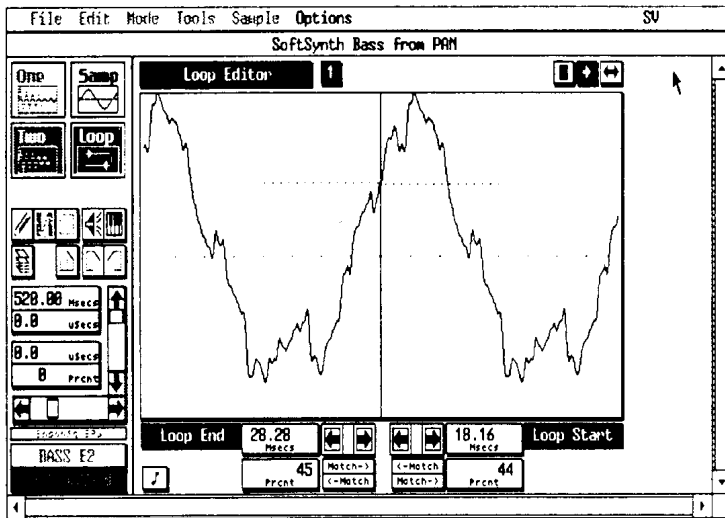


Main Editing Screen

The SAMPLE MENU consists of selections such as Get from Sampler, Send to Sampler, Center Y Resolution which sets your Y cursor to exact middle of the screen in case you get lost in the sample. Info About gives information about the soundfile, name, SMPTE Offset, Sample Rate, Midi Note for Playback, the Fundamental Frequency and a comment file. Zoom Out, Go to Previous View, Edit Samples, Edit Loops, Soundfile Overview and Loop Overview. When you want to edit the loop of a soundfile or edit the sample you can use this menu or simply click on a loop on the screen. The Soundfile Overview provides a plot of the entire soundfile and the Loop Overview plots the contents of the current loop for spotting level differences.

The OPTIONS MENU has selections that let you set the display grids for customizing your display, and a User Interface selection that allows you to set your working environment such as mouse speed, sound or not and colors of the program as well as file storage parms. These can all be saved as the default program for future sessions. Some of the other options from this menu you can select are yes or no, like "Display Loop Splice Lines," "Paste Splice Smoothing" which lets you decide whether or not you want smoothing when pasting which does a fast crossfade between

pasted sounds. There is also a DSP Splice, Clear All Markers and Memory Check selections to finalize the Options Menu.



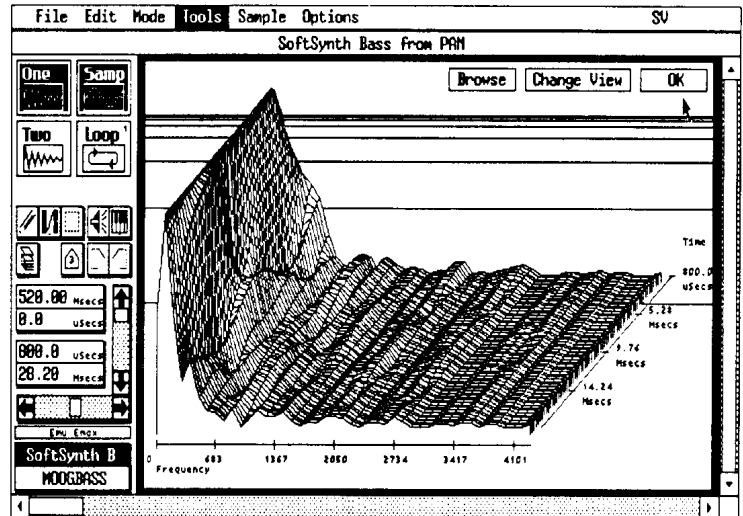
Loop Editing Screen RC030823

The TOOLS MENU consists of Fade/Scale, Normalize, Mute, Interpolate, Digital Equalizer, Merge, Mix, Reverse, Invert, Crossfade Loop, Frequency Analysis, Animate and DC Offset. Fade/Scale will allow you to make your sample's sound fade out as it's played. Normalize looks through the entire soundfile and keeps track of the loudest sound and then digitally turns up the soundfile's volume to the maximum before distortion occurs. The Mute function mutes the sample data for eliminating quite parts of soundfiles. The Interpolate function is used to improve the playback quality of a sample made at a low sampling rate or on a sampler with lower bit resolution than your sampler. The Digital Equalizer uses software algorithms to perform functions of circuitry in a conventional equalizer. Merge is used to crossfade between two samples. Mix allows blending of sounds in percent, a great feature to play with to create new sounds for your library. Reverse simply turns your wave sample data around so can play it backwards - useful for finding those secret impregnated messages in your samples. Invert turns the sample data upside down. If you need a mirror image of the sample data for some very bizarre looping techniques Invert should work well. Crossfade Looping helps eliminate clicks in your sample's loop point. I use this a a last resort if I can't get a perfect loop with the loop editor. You can use either the audio or linear type of crossfade, audio preferred.

Frequency Analysis is the one you amaze your friends with. It's almost like a 3-D view of the soundfile. You can see frequency, time and amplitude all at once with Frequency Analysis and select which section of the sample you wish to view. Animate, cool as well, plots your soundfile repeatedly like an oscilloscope. You say you don't need an oscilloscope, well, this one you do. By animating the soundfile you can see exactly where good looping points exist by noticing where the initial attack dies away and the amplitude becomes "static." DC Offset moves the entire sample up or down. This is used to correct deficiencies caused by miscalibrated samplers.

Of course you would like to hear what your working with, so there is also a 254 note Step Midi Sequencer that allows you to record and play back your soundfile. This onboard sequencer will play notes from your wavesample, you can't do a session with it! This is where the DP8 mentioned comes in VERY handy. It does take some time to send and receive your samples back and forth from the sampler to the computer. If you're like me, 1 minute is too long! The DP8 Digital Playback Port is a easy low cost way of hearing the sample your working with immediately. The DP8 simply attaches to your parallel printer port, providing a female connec-

tor for the printer cable and printing operations are unaffected. The DP8 provides 8 bit digital sound quality for auditioning purposes. Just plug it in and connect the audio cord included to your mixer or amplifier. One of the Icons in the Sample Vision program is the Speaker Icon, just click on it with your mouse and viola! Instant sound! This is pretty neat because you just select a part of the sample you want to audition, any part or the whole sample.



Frequency Analysis

### Gee, It Sounds Pretty Complicated Right? Wrong!

Sample Vision gives you everything you could possibly want in a sample editing program. You can start out just using the basics yet have the other features when you're ready for them. Looping a sample with Sample Vision is as easy as; 1) making your sample and saving it to your sampler's disk, 2) bringing the sample into Sample Vision, 3) using the loop markers to set your loop points.

I use a couple of the extra utilities included with the program quite often for my Midi BBS. These are conversion programs that will let you import Digidesign soundfiles to Sample Vision format. So if you have a friend who has a sampler and uses a sample editor that saves files in the .DIG format these can be converted to the Sample Vision .SMP format, increasing your sound library.

In conclusion, if you're not sure about the program let your fingers do the walking and give the Turtles a call for a free demo disk and you be the judge.

*Bio: Dave Nosek has been stricken by MTV (MIDI Techno-Virus). When he's not buying new synths and MIDI equipment he's writing/playing music in his home studio. His company, Marketing Consultants, pays most of the bills. Dave has recently started a MIDI BBS named SOUND MANAGEMENT with 180 megabytes of MIDI files including samples and direct online messaging to manufacturers including Turtle Beach. Users and manufacturers are invited to call (708) 949-MIDI. ■*

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# Happy Birthday ESQ-1

## The Problem of Aging in America

by Al Goldberg

I know that it is probably a safe bet to say that, somewhere out there, someone has just laid down a hefty chunk of change for an ESQ-1. Anxiously, with slightly sweaty palms and a whirlwind of ideas racing through their head, this person has gingerly taken it out of the hatchback, managed the front door lock, and tenderly laid it right in the middle of the living room carpet. Gently slicing through the unforgiving filament tape, filled with anticipation, they peel back the cardboard darkness to reveal their new wonder, their salvation, their new glory.

In the box, along with the pristine plastic-wrapped pieces, may be a copy of the Hacker. The neophyte picks it up as if discovering a Rosetta stone, to view with amazement the network of activity, the hub-bub and excitement surrounding the community deeply involved with Ensoniq products.

Then our novice turns to this article. If you are this person, go right now and plug in your new toy. Fire it up; there's a new world to be explored. Read the magazine later.

Yes, it is true. The ESQ-1 is now four years old.

I know we can argue that it really isn't the same machine as the one released early in 1986. The operating system has been upgraded several times (with much consternation to many, and joy for many more), and its skin isn't quite the same (I had one of the original "battle wagons" with a real metal casing). And as long as there are people around making new sounds, software, accessories, etc., the ESQ-1 will live and breathe with vitality and health. RC030823

Out in the fast-paced, highly competitive electronic musical instrument marketplace, the "new kid on the block," whoever that may be at the time, is the one that attracts the feeding frenzy from the masses, and frankly, the ESQ-1 has had its day in the sun.

Well, okay Al, time goes by. But what happens in the music community and in your own head when your equipment is perceived as old hat? Should it matter how old your equipment is? What makes you get that itch to try the next big thing? Here is where I throw my bag of qualifiers in your face so that I minimize the "...you stupid jerk" mail.

I know the immediate reaction of many. I have it myself. I rise in the defense of my gear, my original reasons for choosing it, the joy it has given (and continues to give) me. Age matters not. A mini-Moog (model D) is a cherished piece of equipment. The craft is in the craftsman, not the tools. There are sounds that I get out of my Korg Poly-Six that I haven't found on the ESQ-1 (with one oscillator per voice, yet), and on and on.

And yet it is there. The curiosity, the desire for newness. That little itch that whispers "if only I could cross-fade the double-layered sound while auto-mixing the reverb...didn't I see something in that magazine?..." Used ESQs seem to be floating around \$800 (WITH sequence expander). Some of us will fall to the used car syndrome and dump it before the resale value drops too far.

Those of us for whom the dollar value becomes moot once the big check leaves the checkbook begin seeing other slight signs of age. How many ads do you see nowadays for sounds and software for the Prophet-5, the JX-10, the CHROMA, OBXa, Poly-Six? What has happened is that the ESQ-1 and its support network has grown into that "mature product" stage; a nice, cozy, short-lived period where there are thousands of sounds available, computer software, how-to articles each month in the mags, easy access to repair facilities, ESQ-1s flashing across the MTV screen, and - adulthood. Mature at four years. You grow up fast

in this business. This is a tribute to the popularity and sheer goodness of the ESQ-1. Many other synths die at birth (how 'bout my Sequential Circuits MAX?).

What happens in your head when you yourself feel that your equipment is out-of-date? It CAN have an affect on some people - I've seen it. The benefit of knowing the machine inside and out can be offset by a tiredness of the sounds that it makes. Knowing the limitations of a machine well may cause you to make assumptions about it that are not true but that you are not motivated to find out about. Example: How many ESQ-1 owners are still trying to find a good Clav, or choral program in it after being told by "experts" that it just can't produce one. The same for the cymbal. I might be more likely to keep my eye out for a machine that CAN produce these sounds well. This is how you begin to build the list of deficiencies that you will try to eliminate when you get that next piece of gear, and why you might end up with a room full of synthesizers. Hopefully, the sum of all of their potentials eliminates any barriers you felt by any given piece of gear. Also, you can leave a synth alone for a while, then come back to it later with some of that sense of "newness" that you had when you first got it. This tends to break any patterns of use you may have developed (commonly called a rut) that you feel are restricting experimentation.

All of this commentary is leading up to this: As your best synth grows older and is replaced in the magazines and studios by the next big thing; and as the support networks move on to fill the needs of the new toys, you have to make a personal evaluation. If you have accumulated a list of deficiencies about your equipment that you feel is restricting your ability to say what you want to say, then perhaps you should trade your comfort and proficiency with your old friend for the chance to grow and expand into a new synth. If you feel that it doesn't matter that the synth is aging because it's allowing you to express yourself as you need and want, then keep it but be smart; take advantage of the "mature stage" to accumulate all of the information, software, sounds, etc. you can to maintain yourself as these things become harder to find. Use your creative needs as the yardstick, so you don't get rid of something that you realize too late has become a part of your "sound," and you don't buy something that feels foreign to your creative direction.

We should feel fortunate that advancing music technology is continuing to provide us with more and more features for less and less money. Buying the "Next Big Thing" is an investment in money, learning-curve time, and yourself. Be sure that what you buy fits in with your musical plans.

Having an older instrument that you are totally familiar and comfortable with gives you the potential to express your musical ideas with ease. Taking a brand new instrument out of the box gives you the potential to learn and grow into new musical territory. Whether you are punching worn or new buttons, the two key ingredients required are the desire to experiment and learn, and the time to do it with.

Put the ESQ-1 on the rack and keep it plugged into the MIDI network. Put it just below the VFX and the EPS. You might have to move the ESQ-M a little. If you find that you have to unplug the ARP 2600 to gain an outlet, you have to make the decision on what sounds you need from it to sustain your music.

Mature at four years. Don't forget to send in the warranty card.

*Bio: Al Goldberg is a musician, computer analyst, writer and owner of Still Voice Audio, a studio and sound production company in Minneapolis. He spends much of his time hunched over a keyboard on one kind or another, and drinking sparkling mineral water that has become tepid. ■*

# Ensoniq VFX Patch Sheet

by Sam S. Mims

Because of the complexity of the VFX's voice architecture, there has not been an easy and straightforward way to make up a "standard" patch sheet for listing program parameters. I have therefore toiled and sweated to come up with the accompanying patch sheet; it incorporates a few unusual features that merit a brief explanation.

Most importantly, for most of the parameters, the values for all six voices are listed on the same horizontal line. So to enter a patch from a data sheet, you would select voice 1 on the keyboard, and enter all the parameter values in the vertical column labelled "1." The same procedure would then be followed for voices 2 through 6. If a particular voice is not used in the program (i.e. if none of the patch select choices uses it), then that voice should be left blank. Since it will be hard to squeeze the mode description for the filters into the appropriate space, it should be abbreviated, such as HP1 for High Pass 1-pole. A similar problem exists for several other parameters, and abbreviation is the key to overcoming this. Fortunately, it's a simple matter to come up with short, unambiguous abbreviations for these parameters.

Another hurdle to overcome was the fact that when certain parameters are entered on the keyboard (EFFECTS and WAVES pages), the following subpages change depending on the parameters that were entered. To avoid ending up with a patch sheet the size of a small third-world nation, I necessarily left the parameter boxes blank wherever different parameters could occur for the same page location. The sheet layout will accommodate any possible program; it is just necessary for the user to fill in these blanks with the appropriate parameter name, in addition to its value. Note that in some instances, not all of the blank boxes

will be needed.

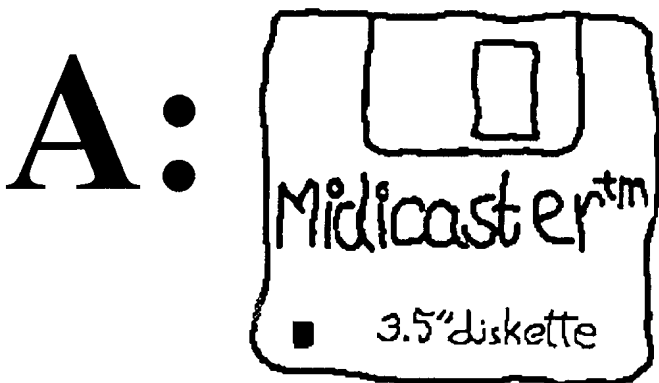
A dotted line on the patch sheet designates a subpage. For instance, in the OUTPUT section, the first five parameters are on the main page, the next four are on the first sub-page (requiring a second press of the OUTPUT button), and the next three are on the second sub-page.

Note that the TIMBRE and RELEASE settings, accessed through the Performance buttons rather than the Programing buttons, are stored as part of a program as well, so they are included on the patch sheet. (It's curious that the Compare LED, to show that a sound has been edited, doesn't come on if one of these parameters is altered.)

In most regards, this patch sheet is pretty straightforward and shouldn't be hard to use. Circle the voices used for each patch select variation, fill in the necessary blank spaces, and leave unused parameters (those that don't affect the sound in any way) blank. Keep an eye on the Hackerpatch for "standardized" abbreviations. And finally, don't forget to send the Hacker your favorite VFX creations; I've started the ball rolling this month with the TROMBONE patch on page 20.

*[Ed. - To fit this puppy on a single page we had to use fairly small type. This should be fine for reproducing patches here in the Hacker, but if you're filling these out with a dull No. 2 pencil it's going to be a little tough. You may want to zip over to a copy shop and shoot our blank patch page with an enlarging photocopier to generate something that's easier to use "in the field."]* ■ RC030823

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VFX Prog:

By:

NOTES:

RC030823

WAVES	1	2	3	4	5	6
Wave						
Wave Class						
Delay						
Start						

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

PITCH	1	2	3	4	5	6
Octave						
Semitone						
Fine						
Pitch Table						

PITCH MODS	1	2	3	4	5	6
MODSRC						
MODAMT						
Glide						
ENV1						
LFO1						

FILTER 1	1	2	3	4	5	6
Mode						
Cutoff						
KBD						
MODSCR						
MODAMT						
ENV2						

FILTER 2	1	2	3	4	5	6
Mode						
Cutoff						
KBD						
MODSCR						
MODAMT						
ENV2						

OUTPUT	1	2	3	4	5	6
VOL						
MODSRC						
MODAMT						
KBD Scale						
LO/HI Key						
Dest Bus						
Pan						
MODSRC						
MODAMT						
Pre-Gain						
Voice Prior						
Vel Thresh						

LFO	1	2	3	4	5	6
Rate						
MODSRC						
MODAMT						
Level						
MODSRC						
Delay						
Waveshape						
Restart						
Noise SRC RT						

SELECT VOICE

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

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

ENV2	1	2	3	4	5	6
Initial						
Peak						
Break 1						
Break 2						
Sustain						
Attack						
Decay 1						
Decay 2						
Decay 3						
Release						
KBD Track						
Vel Curve						
Mode						
Vel-Level						
Vel-Attack						

ENV3	1	2	3	4	5	6
Initial						
Peak						
Break 1						
Break 2						
Sustain						
Attack						
Decay 1						
Decay 2						
Decay 3						
Release						
KBD Track						
Vel Curve						
Mode						
Vel-Level						
Vel-Attack						

PGM CONTROL

Pitch Table
Bend Range
Delay
Restrike
Glide Time

EFFECTS (1)

Effect
FX1
FX2

EFFECTS (2)

--

EFFECTS (3)

--

PERFORMANCE

Timbre
Release

# VFX Prog: TROMBONE

By: SAM MIMS

**NOTES:** I created this patch from the factory SOLO TRUMPET, so start with that program and you'll save some button pushing. TROMBONE uses the TRUMPET sampled waveform, but I essentially lowered the sample by modulating it downward in pitch via ENV 1; this bypasses the multisample split points and gives the sound of a larger and lower instrument. The tuning parameters were then used to get the correct pitch back. Voice 2 is the main component here, and is the only one used for the solo trombone. Program it first, and then copy all the parameters to voice 3. Voice 3 is used as the right

patch select, and gives a "scooped" attack to the note, characteristic of trombone playing; this is done with ENV 1, which is still lowering the sample as well. Finally, voice 5 is used as a solo trumpet (left patch select button). It is not a monophonic sound, like the factory trumpet. By pressing both patch select buttons, you can play the trumpet and trombone together, an octave apart. RC030823

WAVES	1	2	3	4	5	6
Wave		Trumpet	Trumpet		Trumpet	
Wave Class		Brass Snd	Brass Snd		Brass Snd	
Delay		000	000		000	
Start		00	00		00	
Vel St-Mod		+02	+02		+02	
Direction		Forward	Forward		Forward	

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

PITCH	1	2	3	4	5	6
Octave		+0	+0		+0	
Semitone		-01	-04		+00	
Fine		-06	+14		+00	
Pitch Table		System	System		System	

PITCH MODS	1	2	3	4	5	6
MODSRC		Off	Off		Off	
MODAMT		-	-		-	
Glide		None	None		None	
ENV1		-69	-69		+00	
LFO1		+03	+03		+03	

FILTER 1	1	2	3	4	5	6
Mode		LP3	LP3		LP3	
Cutoff		017	017		063	
KBD		-06	-06		+00	
MODSCR		Vel	Vel		Vel	
MODAMT		+15	+15		+15	
ENV2		+61	+61		+61	

FILTER 2	1	2	3	4	5	6
Mode		HP1	HP1		LP1	
Cutoff		000	000		096	
KBD		+00	+00		-20	
MODSCR		Tim	Tim		Tim	
MODAMT		+99	+99		+99	
ENV2		+00	+00		+00	

OUTPUT	1	2	3	4	5	6
VOL		99	99		99	
MODSRC		OFF	OFF		OFF	
MODAMT		-	-		-	
KBD Scale		+00	+00		+00	
LO/HI Key		-/-	-/-		-/-	
Dest Bus		FX2	FX2		FX2	
Pan		50	50		50	
MODSRC		OFF	OFF		OFF	
MODAMT		-	-		-	
Pre-Gain		OFF	OFF		OFF	
Voice Prior		MED	MED		MED	
Vel Thresh		+000	+000		+000	

LFO	1	2	3	4	5	6
Rate		34	34		35	
MODSRC		Press	Press		Press	
MODAMT		+06	+06		+04	
Level		02	02		08	
MODSRC		Press	Press		Press	
Delay		47	47		16	
Waveshape		Sine/Tri	Sine/Tri		Sine/Tri	
Restart		ON	ON		ON	
Noise SRC RT		00	00		00	

## SELECT VOICE

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

## ENV1

	1	2	3	4	5	6
Initial		99	99			
Peak		99	74			
Break 1		99	74			
Break 2		99	74			
Sustain		00	00			
Attack		99	22			
Decay 1		99	99			
Decay 2		99	99			
Decay 3		99	99			
Release		99	99			
KBD Track		+00	+00			
Vel Curve		CV2	CV2			
Mode		NOR	NOR			
Vel-Level		00	00			
Vel-Attack		00	00			

## ENV2

	1	2	3	4	5	6
Initial		99	99		99	
Peak		99	99		99	
Break 1		82	82		82	
Break 2		86	86		86	
Sustain		92	92		92	
Attack		00	00		00	
Decay 1		25	25		25	
Decay 2		30	30		30	
Decay 3		53	53		53	
Release		31	31		31	
KBD Track		+00	+00		+00	
Vel Curve		CV3	CV3		CV3	
Mode		NOR	NOR		NOR	
Vel-Level		36	36		36	
Vel-Attack		00	00		00	

## ENV3

	1	2	3	4	5	6
Initial		99	00		99	
Peak		99	99		99	
Break 1		99	99		99	
Break 2		99	99		99	
Sustain		99	99		99	
Attack		00	00		00	
Decay 1		37	37		37	
Decay 2		30	30		30	
Decay 3		52	52		52	
Release		19*	19*		19*	
KBD Track		+00	+00		+00	
Vel Curve		CC2	CC2		CC2	
Mode		NOR	NOR		NOR	
Vel-Level		00	00		00	
Vel-Attack		00	00		00	

## PGM CONTROL

Pitch Table	OFF
Bend Range	02
Delay	X4
Restrike	29
Glide Time	00

## EFFECTS (1)

Effect	Lgr Hall Rev
Decay Time	71
FX1	36
FX2	50

## EFFECTS (2)

Pre-Delay	055
Early Reflvt	20

## EFFECTS (3)

FX-2 Mode	NOR Stereo
Rev HF Damp	45

## PERFORMANCE

Timbre	00
Release	00

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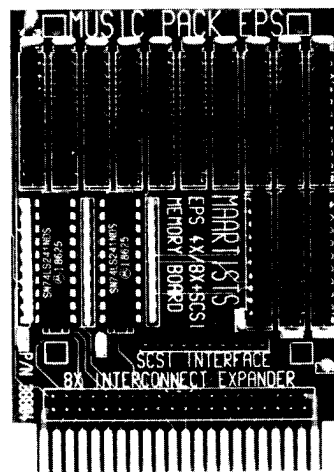
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# Hackerpatch

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.

## The Patch: JAGUAR RC030823

by Mark E. Moulding, Rancho Palos Verdes, CA

*This patch is a remake of my beloved (if somewhat cheesy) Vox Jaguar stage organ from college days. All the oscillators are set to the 4 OCTS waveshape because that's the way that the Jaguar (and most other organs of the day) generated their various timbres - just use a single oscillator for each note, then divide it by 2s to get all the harmonics. This approach, although affordable with the electronics of the day, tended to obscure the melody line in a mass of octaves. Just like this patch....*

### The Hack

Mark has hit the target with his Vox imitation. If you're doing stuff like the Beach Boys' "California Girls," here's the sound. It's cheesy alright, just like the original, and the mod wheel adds a bit more cheese with the fast vibrato. If you want a fatter (but less realistic) sound, try detuning OSC 2 to FINE=03 and OSC 3 to FINE=02. You can get some different organ sounds by shuffling some waveforms around; try various combinations of SINE, EL PNO, ORGAN, OCTAVE, and OCT+5 in addition to the 4 OCTS. When you've decided on your favorite combination, try producing instant "distortion growl" by zipping to the MODES page, and toggling AM to ON.

## The Patch: RESBAS

by Bryan Bogue, Spokane, WA

*This patch is designed to emulate that bass sound popular a few years ago, and perhaps best known from the theme to "Top Gun." The pitch and mod wheels need work in order to be useful, but the initial sound is just about there.*

### The Hack

I never saw "Top Gun," but I like the sound of RESBAS - it's very different from most of the bass sounds around. First off, though, it doesn't have enough punch, and can easily get lost in a mix. Bringing up the LEVEL of DCA 2 to 63 solved that problem right away. It is the SYNC function that both gives this patch its character, and causes problems with the pitch bend wheel (and mod wheel if a vibrato effect is programmed in). When the pitch of OSC 1 is changed, it rapidly changes the waveform of OSC 2 which is synced to it, thus causing the digital noise. So, you're pretty much out of luck pitch bending RESBAS. I did want a mod-wheel vibrato (or aftertouch vibrato on the SQ-80), however, so I set up LFO 1, and applied it only to OSC 3 (MOD #1=LFO 1, DEPTH=+03). The LFO 1 settings I used were: FREQ=21, RESET and HUMAN=OFF, WAV=TRI, L1=00, DELAY=03, L2=18, MOD=WHEEL (or PRESS on the SQ-80). This gives a little "wiggle" to the notes without spazzing them out. Finally, to make the sound a bit bigger, I used LFO 1 as the PAN MOD (DCA 4 page) with a depth of +63.

**The Patch: SFLUT3./FLUT 3.**  
by A. R. T. Gven, Paris, France

*This is a flat flute sound that has an extended range. Be careful*

*with the velocity; play smoothly, or change the envelope parameters. (This is a split program; enter as shown on the patch sheet, and write it to memory. Then edit FLUT 3. as follows: on the FILTER page, change FREQ to 19, RES to 4, KEYBD to 8, and MOD #1 DEPTH to +22; on the ENV 4 page, change LV to 00 and T1V to 32; on the SPLIT/LAYER page, set SPLIT to UPPER, SPLIT PROG to FLUT 3., and SPLIT KEY to 74. Now save this as SFLUT3., which is the patch that should be used for performance.)*

### The Hack

I guess "Sounds From Yesterday" is the theme of this month's column. First a Vox Jaguar organ, a resonant synth bass, and now a flute sound that is reminiscent of the Mellotron flutes on "Stairway to Heaven." I wouldn't use this if you need a flute for a symphonic piece, but it's a nice sound. Hard key strikes, as M. Gven warned, give a very abrupt attack; I preferred toning this down a bit by using T1V=18 on FLUT 3., and T1V=28 on SFLUT3. I made only one other change, and that was to swap the WHEEL and PEDAL functions (simply change WHEEL to PEDAL wherever it appears, and vice versa), so that the mod wheel controls vibrato and the pedal controls filter brightness.

## The Patch: HVYSNR

by Jim Lammers, Leawood, KS

*A loud, crashing, 2-and-4-backbeat snare: if you need it, this patch has it. The sound is made up of the basic snare hit, followed by an echoed snare at a slightly lowered pitch. ENV 1 causes this delay in the striking of the second snare hit. On top of all this is white noise sound swept downward with the filter. This patch works well split with the factory patch DRMSET for the drums in those heavy metal/disco songs you've been dying to write. Lowering DCA 3's volume will cut back the crunch a bit if the sound is too overpowering.*

### The Hack

I'm not overwhelmed by this sound on its own, but it can work well doubled, for instance, with a drum machine to get a unique snare sound; I like it best in the middle range of the keyboard. As Jim pointed out, ENV 1 is set up to trigger OSC 2 slightly after a key is struck, to create an echo effect. If you want to "tune" this to the beat of a song, T2 of this envelope controls the delay time. However, if you delay too far (with higher values of T2), ENV 3 (controlling the filter) will cut the sound out before you ever hear it.

LFO 2 adds a bizarre panning that contributes to the uniqueness of the patch, but it doesn't work for all applications. I'd suggest using the mod wheel (or CV pedal) to bring this panning in when needed. Simply change L1 and L2 to 00, and MOD to WHEEL (or PEDAL).

Because this patch is based on the SQ-80's SNARE waveform, ESQ users are out of luck with this one.



*Bio: Sam Mims is a studio session player in Los Angeles, and a member of the band THE NEWKS. He is a Contributing Editor for GIG magazine, and owns Syntaur Productions—a company that produces music for television, radio, and film. In addition, Syntaur markets synth patches for the ESQ-1 and SQ-80.*

**ESQ-1 PROG: JAGUAR**

BY: MARK MOULDING

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	4OCTS	LFO1	1	OFF	-
OSC 2	0	0	0	4OCTS	LFO1	1	OFF	-
OSC 3	2	0	0	4OCTS	LFO1	1	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	50	ON	OFF	-	OFF	-
DCA 2	50	ON	OFF	-	OFF	-
DCA 3	50	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	127	11	0	OFF	-64	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO3	58

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	26	ON	OFF	TRI	0	0	0	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	6	OFF	ON	TRI	56	0	20	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	63	63	63	0	0	0	25	63	9	0

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

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

**ESQ-1 PROG: RESBAS**

BY: STEVE VINCENT

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	5	SINE	OFF	-	OFF	-
OSC 2	0	0	0	NOISE2	OFF	-	OFF	-
OSC 3	-1	0	2	OCTAVE	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	ENV1	63	ENV1	63
DCA 2	39	ON	ENV1	43	ENV1	43
DCA 3	63	ON	ENV1	63	ENV1	63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	4	8	31	ENV3	51	ENV2	40

	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	54	52	63	0	32	63	63	63	1
ENV 2	63	0	0	0	0	0	0	0	0	0
ENV 3	63	30	15	41	22	0	25	30	37	18
ENV 4	63	35	0	36	24	0	33	48	22	9

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

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

RC030823

**ESQ-1 PROG: FLUT3**

BY: A.RT.GVEN

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	4	PULSE	LFO1	-2	ENV1	7
OSC 2	-1	0	0	SQUARE	LFO1	-2	ENV2	1
OSC 3	-1	0	0	SQR2	LFO1	-4	ENV2	1

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	-	OFF	OFF	-	OFF	-
DCA 2	-	OFF	OFF	-	OFF	-
DCA 3	40	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	16	7	10	ENV3	29	WHEEL	12

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	7	OFF	-

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	19	ON	ON	TRI	0	1	34	PEDAL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	52	0	0	63	0	3	3	0	0	0
ENV 2	-1	5	4	63	32	1	19	27	19	32
ENV 3	63	63	55	3	53	11	6	15	10	0
ENV 4	63	61	61	15	63	18	8	0	26	63

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

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

**SQ-80 PROG: HVYSNR**

BY: JIM LAMMERS

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-2	0	0	SNARE	OFF	-	OFF	-
OSC 2	-3	11	0	SNARE	ENV1	63	ENV1	63
OSC 3	-3	0	0	NOISE2	LFO1	63	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	OFF	-	OFF	-
DCA 2	54	ON	ENV1	63	OFF	-
DCA 3	32	ON	ENV2	63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	66	6	6	ENV3	54	VEL	25

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO2	63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	63	ON	ON	NOI	63	0	63	OFF
LFO 2	10	ON	OFF	SAW	63	0	63	OFF
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-63	-63	0	0	0	0	18	0	0	0
ENV 2	63	13	20	0	0	0	0	35	26R	0
ENV 3	63	-63	-63	18L	0	0	30	63	0	0
ENV 4	63	0	0	40L	30	0	54	0	0	0

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

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

# Classifieds

## USER GROUPS

Looking for EPS users in the Miami, FL area for user group. Also, anyone interested in swapping sounds by mail. (305) 388-2257, Mikey.

## SAMPLES

Soundprocess disk library - my "Lush," "X," "DeMity," "Addy," and now the "Turbo" disk - only \$25 plus \$1 postage and handling each. Or all five disks, over 600 sounds, for only \$103.00! Also, my EPS/Mirage library of over 300 sounds. Send for my list of samples. Bob Spencer, 703 Weathby Ln., Greensboro, NC 27406.

**ORIGINAL EPS SAMPLES** from M-1, D-50, DX72d, & Proteus. Digitally recorded in one of NY's finest studios. \$12 per disk, as low as \$9 per disk in quantity. MUG and SOCO members inquire about discounts. Call or write for info. **Maestro Sounds**, 113-30 199th St., Jamaica, NY 11412. (718) 465-4058.

**2000 QUALITY SAMPLES.** 3 hours on 2 Maxell cassettes. From the BEST KEYBOARDS around. VFX, D50, M1, K1, K5, DX, MINI/MEM MOOG, STEINWAY CONCERT GRAND. Sample and play. Easy to use, \$15.95. NEXT-DAY FREE SHIPPING. WILDWOOD SOUNDS, 4726 Pebble Creek Terr., Pensacola, FL 32506. 904-944-6012, Tony, after 6 pm.

SCOTTISH SIDE DRUM sample for EPS. Very limited appeal, but if you're into bagpipe bands... check this out! 200 blocks, multi-player effects, sequenced drum parts (4) and playing instructions. \$5.00 to David Grebos, 220 Homan Ave., State College, PA 16801. 814-234-1512.

EPS and Emax samples of Matrix-12, Super-JX, CS-80, Prophet VS, Kurzweil, Oberheim & Moog Modular Synthesizers, DX7 layers. Also horns, sticks, pianos. Demo disk \$5.00. Send SASE for catalog. ROCKET SCIENCE, Dept. TH, PO Box 4991, Thousand Oaks, CA 91359-1991.

EPS owners: I have hundreds of sampled sounds in my library for trading. For list, write to: Tim Hamel, 1726 SW Anthony Dr., Aloha, OR 97006, or call 503-649-3312.

VFX SAMPLES for the Mirage! Mirage Disk 1 contains Minimoog Bass, Minimoog+Slap Bass, DX-7 Slam Bass, VFX Breathly Flute, VFX Breathly Voices, and VFX Funk Guitar. \$7.95 from Syntaur Productions, 11116 Aqua Vista #2, North Hollywood, CA 91602.

Mirage samples: created with input sampling filter - yielding 50 kHz. Also custom services. 400 sounds. Listings: \$1.00. Demo tape: \$6.00 (includes listings). Mr. Wavesample, 162 Maple Place, Keyport, NJ 07735. 201-264-3512. Make checks payable to Jack C. Loesch.

## EQUIPMENT

MINIMOOG - Mint. Also, Voice Crystal data cassettes, VC1, VC2, VC3: \$30. (904) 944-3556.

Modified TR-505 Roland Drum Synth. Eight separate outputs (+ stereo outs) \$238/OBO. Macintosh 400k ext. disk drive \$60. Greg, (602) 285-0889, 1826 E Indianola, Phoenix, AZ 85016.

Ensoniq ESQ-1 w/2,000 sounds and 10,000 note sequencer expander and 80-voice RAM cartridge: \$795 firm. Mint condition! Mastertracks 16-track sequencer program for C-64, with full documentation and backup disk: \$25. 3.5" blank disks: \$0.50 each. \$2.00 s/h. (303) 722-1477.

MIRAGE DSK sampler with disks, dustcover, \$600. ESQ-1 synthesizer, dustcover, \$600. Original owner. Wendell Ing, 41 Laimana St., Hilo, HI 96720. Tel. 808-935-4151.

MIRAGE - Turbo MME memory expansion. Gives Mirage 5 disks of sound at once! \$175 or \$575 with Mirage rack. Korg M1 keyboard - the ultimate sample playback. \$1550/best offer. Korg M3R (rack version of M1) new, \$875. Digital MX-8 MIDI patchbay \$225. 201-389-2197.

Tascam 388 Studio 8 tape recorder/mixer. Used for only 10 hours on mixer, tape heads only 1 hour total. Perfect condition. Selling to upgrade to 16 track. 305-437-8312.

ENSONIQ EPS, with 2X expander, 3 mos old. \$1750 + shipping. 801-565-0235 after 6 pm MT.

**SAVE SAVE SAVE EPS-4X EXPANDERS** unbelievably low USER GROUP PRICES. Loaded VFX, ESQ/SQ80 160 RAM cartridges. Too low to quote. **CALL TODAY AND SAVE.** WILDWOOD SOUNDS, 4726 Pebble Creek Terr., Pensacola, FL 32506. 904-944-6012, Tony, after 6 pm.

CUSTOM-MADE DUST COVERS for VFX, EPS, SQ-80 and ESQ-1 (post serial #25,000). Made of durable black double-stitched poly/cotton. NOT PLASTIC! Send \$22.95 plus \$2.00 p/h to: STAR COVER, 21229 Pacific Coast Highway, #1001, Malibu, CA 90265-1001.

(Holiday Clearance Sale) ESQ-1 with 2,000 sounds and 10,000 note Sequencer Cartridge: \$895.00. MIRAGE: \$695.00. YAMAHA TX7 with 5,100 sounds: \$295.00. YAMAHA TX81Z with 1,200 sounds: \$295.00. ROLAND AXIS 1 Remote/Guitar KEYBOARD with hard case: \$595.00. All equipment MINT CONDITION!! David Collins, call (303) 722-1477.

**EPS 4X Expander** by Maartists, \$488.00. Fully approved. User installable. **RAM CARTRIDGES:** VFX, \$89.95; M1, \$89.95; K1, \$49.95; Roland M256D, \$64.95; ESQ/SQ80, \$42.95 (80V), \$69.95 (160V). FREE shipping. Five-year guarantee. Made in U.S.A. **SOUND LOGIC**, 1125 Eleventh St., Ramona, CA 92065. For orders: 800-753-6558.

## WANTED

If anyone has any TR-808 samples or other outdated drum machine samples for the EPS, please contact me! I desperately need them! Help your fellow hackers! John Epperson, 25802 Santo Dr., Mission Viejo, CA 92691.

Wanted: ESQ-M. Cam McMinn, 503-626-1135, evenings (PST), 282-0655.

Wanted: Memory expander for Mirage Rackmount. Prefer MME (Virtual Engineering), will consider IVM Megabank. Will pay top \$ for kit in good condition with docs. Contact Ned Selfe, PO Box 31084, San Francisco, CA 94131. (415) 641-6207.

## HOT GEAR

If anyone knows the location of ENSONIQ EPS serial number 18649-F, please contact the Cleveland Metroparks Ranger Department at 216-243-7860 and ask for Ranger Stark or Sergeant Mudra.

## SOFTWARE

Digidesign Soundesigner software for Mirage, \$100 (Mac); Soundfile and Opcode sequence and bank libraries for ESQ-1, \$35 each (Mac). Original owner. Wendell Ing, 41 Laimana St., Hilo, HI 96720. 080-935-4151.

EPS-Sense: IBM Sound Editing System for the EPS/EPS-M reviewed issue #50 of TH. Program: \$50.00. MSC: IBM VES for Mirage reviewed issue #38. Program: \$25.00, demo: \$7.00. Add \$5.00 for S/H. Send check to: Jeffrey Richter/Donna Murray, 3502 Village Bridge Apts., Lindenwold, NJ 08021. Phone: 609-346-0943.

## PATCHES

Professional quality ESQ/SQ patches. 40 patches per volume. Volume 1: drums, basses, orchestras, soundtracks. Volume 2: winds, drums, synths, leads. Volume 3: keyboards, pads, wine glasses - Super! Volume 4: killer SOUND EFFECTS!!! \$15/volume, cassette or Opcode format. Patchman Music, 2043 Mars Ave., Lakewood, OH 44107.

LAST CHANCE! You've seen my ads and you've seen my review (TH #48). Order now before it's too late. Absolutely guaranteed! \$12 data cassette. Jim Symonds, 4 Kenwood St., Portland, ME 04102.

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D-50-TYPE SOUNDS, natural reverb, and much more for the ESQ-1 and SQ-80. SOUNDSET 2 is 40 new patches from the Hacker's Sam Mims. \$17.95 postpaid, available on cassette, SQ-80 disk, or Mirage disk. SOUNDSETS 1 and 2 (80 patches) for \$29.95, on EEPROM for \$59.95. Extensive programming booklet with patch sheets included. Syntaur Productions, 11116 Aqua Vista #2, North Hollywood, CA 91602.

5,056+ DX711FD/DXTX7 Sounds \$29.95. SQ-80/ESQ-1: 840 Super Sounds \$29.95. 1,030 NEW! V50/DX11/TX81Z/YS200/DX1002127 Sounds \$29.95. P/H \$3.00. MUSIC WORLD, 617 Panorama Dr., Grand Junction, CO 81503.

## SEQUENCES

EPS SEQUENCES! Many current titles available. Send \$3.00 for info. JV Sound Productions, PO Box 7983, Fremont, CA 94538.

EPS SEQUENCES. Do you need to expand your repertoire *backwards*? I have great sequences of all the tunes you have to do - swing, shuffle, Latin, big band, pop, & 50's rock. Call for \$5 demo, price & song list. Dave, 619-564-1080.

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## OUT-OF-PRINT BACK ISSUES

M.U.G. will provide Out-of-Print issues for cost of materials and postage. M.U.G. Hotline: 212-465-3430 or write: G-4 Productions, 622 Odell Ave., Yonkers, NY 10710.

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

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

## FREE CLASSIFIEDS!

Well, - within limits. We're offering free classified advertising (up to 40 words) to all subscribers for your sampled sounds or patches. Additional words, or ads for other products or services, are 25 cents per word per issue (**BOLD** type: 45 cents per word). Unless renewed, freebie ads are removed after 2 issues. While you're welcome to resell copyrighted sounds and programs that you no longer have any use for, ads for copies of copyrighted material will not be accepted.



# 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, or PAN: TRANSONIQ.

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.

Dear TH,

I was recently informed by a friend that a third party software company that advertises through TH has been selling some of our samples as "public domain" samples. From my understanding and from the letter that Nick Longo, Cesium Sound, wrote in last month's Interface, these types of programs are a recognized form of intellectual property, both by the Library of Congress, and by the legal community, and that unauthorized distribution is illegal. This is true even if you didn't know where they came from, or if you didn't know that they were copyrighted.

When I approached the software company in question, they seemed to be more than happy to work with me in removing any of our samples from their existing library. My first question is, what and who determines if such samples are in fact, public domain?

It is my opinion and the opinion of the legal community, that only the author of such programs can determine whether or not he or she would like these programs to be available for public domain use, in which case they should be distributed free of charge. In the case of a song for instance, it would not be available for public domain use until 50 years after the author of such a song has deceased. My second question is, should I have to police this particular company's or any company's software to make sure that our samples didn't get passed into their "public domain" library?

I think that the answer is obvious. NO! If this company or any other does not know where the samples they have in their possession originated, they have no right to distribute them at all, let alone decide that they are "public domain." I think that this type of business is totally and completely unethical and illegal. This particular company also advertises that their samples are cheaper and rival those more expensive libraries. This is true only because they have been acquired from those more expensive libraries, so they not only rival them, but they are, in fact, identical; and sure they can be sold for less because they did not put their hard work and time into developing them. In this case the names of the samples were not even changed, and of course the block numbers remained the same, and when we threw the waveforms up on the Macintosh-screen, of course they were also, in fact, identical. And my final question is, will this company be ready to reprint their catalogue now and every time I discover that they have gotten hold of one of our samples? I think not.

By the way, I'm sure Ensoniq will be interested to find out that some of their Mirage Tm factory samples are also in this so called "public domain" library.

Sincerely,  
Bob Grey  
Greysounds Sound Development

Northridge, CA

*[TH - We certainly agree that you shouldn't have to police other companies to make sure that they're not stealing your work, but, unfortunately, that's probably what it comes down to. Nobody else is going to have the interest, incentive, or even the necessary knowledge to discover this when it happens.]*

*Companies that are unintentionally selling sounds that turn out to be copyrighted should certainly be more careful in checking their sources. We would think that anyone in that business would find it in their interest to cover their rears with documentation on the author of each sound and their release to the public domain. They should steer clear of all the sounds that can't be traced or any "authors" who balk at signing such documentation.]* RC030823

*[Ensoniq's response - Ensoniq does not condone the illegal copying of sounds, period. We fully recognize the value of their work and feel they deserve to be duly compensated for their efforts. We are not aware of any individuals who are illegally distributing any of our factory sounds but if we learn of these types of activities we will prosecute.]*

Dear Hacker,

I've had my **EPS** for several months now, and enjoy your informative magazine. I have a question regarding sampling I hope you can help me with. It involves the number of voices available for a given sound.

As I understand it, one voice is used for each layer. If this is correct, why do I have 10 voices for the Ensoniq Grand 88 sample, which uses three layers? Also there is a page to select the number of voices, and another page to select the sampling rate. Since the sampling rate apparently influences the number of voices (I don't understand how), why is it that there is a separate page for selecting the number of voices?

If one samples at a high rate, with a resulting 12 voice playback mode, can this mode then be changed to 20 voices using the page mentioned earlier? I suspect not, but I don't understand why. Would you clear this up for me? How does the playback mode page, sampling frequency, and voice architecture interrelate?

Thank you,  
Richard Rife  
Abingdon, MD

*[Ensoniq's response - One of the layers in the Grand 88 plays a "harp thump" sample, and that layer is monophonic. The dynamic voice allocation keeps re-stealing that one voice over and over again, leaving the remaining 19 voices to play the other layers.]*

*Regarding your second question, it's impor-*

*tant to understand the difference between input sampling rates and playback sampling rates. The input sampling rate determines the number of times per second a sound is sampled when you use the sampling function of the EPS. It has no effect on the number of voices you have for playback.*

*The playback (output) sampling rate determines the rate at which the EPS reads the wave data out of memory. This is the factor which directly affects how many voices you have to play.*

*Another point we should add is that you choose an input sampling rate based on the frequency content of a sound, the more "highs" - the higher the input sampling rate you should use to capture the sound. You cannot add any fidelity to a sound which was sampled at a low rate by choosing a higher playback sampling rate. It will only increase the bandwidth of a sound that has the higher frequencies already present.]*

Hacker,

I have a question for you. I'm a novice user of an **ESQ-1** and don't know a great deal about the machine yet.

I like to use the "quantize" feature. Why then when I play a new unrecorded track do the notes sometimes get chopped off before I release my finger from the key? When trying to play a long background note, the note gets cut off before I want it to.

What's happening, and can I do anything about it? I seem to notice it most when I've noticed it most when I've quantized more than one track on the sequence. I am using firmware level 3.5 in my **ESQ-1**.

Thank You,  
Donald Stevens  
Haslett, MI

*[Ensoniq's response - Most likely you are running out of voices. The ESQ-1 has eight voices, therefore if more than eight notes are played at once, one of the notes (possibly the one you are playing at the keyboard) will be stolen. This happens more often as you quantize because notes that previously weren't sounding at the same time are shifted by quantizing to now occur on the same beat.]*

Dear Hacker,

When I press **COMMAND** and then double-click **ENV 1** on my **EPS** a number of pages occur that have no explanation in the books - pages like **EXAMINE DOS STATUS**, **EXAMINE ANALOG INPUTS**, **MSB ADJUSTMENT** and **DC OFFSET ADJUSTMENT**. When I press **YES** strange things happen - some of them seem to go on forever. My Ensoniq dealer doesn't know anything about these pages. Please explain them to us.



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And if I have destroyed any preset settings by entering these pages how do I get them back?

Yours sincerely,  
Mats Beckman  
Jarafalla, Sweden

*[Ensoniq's response - These pages are for running diagnostic tests at our factory and require special test equipment and input signals for proper operation. You can't hurt anything by selecting these tests, but without the proper diagnostic equipment attached, the system may lock up and need to be turned off to restore normal operations.]*

Dear Hacker,

The **EPS** is the first keyboard I have had with sequencing capability and I'm loving it. The only other keyboard I have had was a DX7. The thing that impressed me about the EPS was how quickly I was able to start producing quality songs, with no previous sequencing experience. Although the EPS has some great sounds, I was a little disappointed the first time I put together a bank and a song and I couldn't save it all on one diskette. I guess I didn't realize I would have to sink another \$500 - \$600 into a hard drive before I could do what I really want to do.

Fortunately, I was smart enough to at least buy the double expanded memory, but it won't be long before I spend an additional \$400 - \$500 on the 4x expander. I'm constantly running into that 2000 block limit.

Since I'm working under some memory and disk drive constraints, I have become a "block" conservationist, and I have a question that may have already been addressed in a previous issue of your publication. However, I asked the salesman from whom I purchased my EPS, and he couldn't answer it (and I consider him to be somewhat of an expert).

Let's say there is an instrument that uses 8 layers, but the patch that I want to use only uses layers 1 and 2. So I create a new instrument with only the wavesamples that are in those layers. Just for the sake of approximate figures, let's say I have eliminated 75% of the wavesample that were in the original instrument because I didn't use 6 of the 8 layers that contained other wavesamples. But when I'm all done and I check the size of the new instrument, I'm lucky if it's 10% smaller than the original instrument! If I'm doing something wrong, tell me what it is, and if I'm not, please explain this.

I had a problem the first week I had the keyboard that may be of interest to your readers. I had been playing it in a rehearsal and we were taking a break. All of the sudden, the EPS started playing all by itself. It wasn't playing a sequence or a song, it was just playing random notes. It wouldn't respond to any of the commands that I was giving it so I had to turn it off to make it stop playing. Fortunately, it did stop playing. If it had kept playing after turning it off, I really would have started to wonder. I rebooted and it was OK the rest of the rehearsal. Two nights later at the first job I used it in, it did it again at the sound check. I took it back to the store and Ensoniq diagnosed the

problem as the display. They installed a new display and that didn't fix the problem. The keyboard was unable to tune during boot up. So they overnighted a new set of keys with the attached circuitry. That seems to have taken care of the problem, but I'm still watching it closely.

Sorry for such a long letter. All I started out with was a request for a one-year subscription. You guys keep up the good work. Keep including those list of approved hard drives and memory expanders. I know it won't be long before I purchase those items.

Scott Hendryx RC030823  
Peoria, Ill.

*[Ensoniq's response - It's true that you can't save a Bank across two disks, but we should add that there are many other benefits to using a hard disk-based EPS system including faster load time, macros and a greatly enhanced file organization system to conserve memory efficiently.]*

*Regarding your question about deleting layers: in many EPS instruments most or all of the sample data is contained in the first layer, with the remaining layers using the same wave data with varied parameters. This does not use up nearly as much memory as duplicating wavedata would. You must delete the actual wavesamples in order to save significant amounts of memory. Note that the EPS will not allow you to delete a wavesample that is being used by other layers.*

*Regarding your keyboard problem, early EPS's did have that problem and we have found the cause and corrected the situation.]*

Dear Hacker,

I love my **EPS** and its sequencer. I will, however, be forced to buy a computer for all my sequences unless you are able to allow access to tempo changes in SONG. Is this possible in the very near future? I hope I do not have to abandon my EPS's sequencer forever and be forced to buy a computer simply for that one function!

I am worried though, because Rubber Chicken Software asked you the same question in TH Issue 52, and you did not respond. Please respond.

EPS lover,  
Keith Thomas  
Stratford, Ontario  
Canada

*[TH - Well, it was asked again in #54. You've probably seen it by now, but in case you missed it, here it is again. Ensoniq: "It isn't possible, given the EPS sequencer structure to program tempo changes into a song. You can, however, chain sequences with different tempos to achieve a similar result."]*

Dear Hacker,

After reading your November issue, I am compelled to respond to several issues.

I've owned an **ESQ-1** for a little over two years and three months ago I purchased a

VFX. My ESQ-1 software version is 2.2, and being guided by the philosophy of "if it ain't broke, don't fix it," I've never updated, since I've never had any problems with it and don't necessarily need the update sequencer functions. It's never been in the shop once, and the few problems I had with it were solved quickly by re-initializing it. I was impressed by the quality and price; the fact that Ensoniq was a smaller, up-and-coming, aggressive company that seemed to respond to customers needs, and the third party support appeared abundant. These are the reasons that I purchased the VFX.

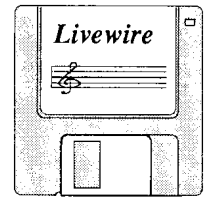
The VFX is truly a remarkable instrument, and the possibilities for unique sounds is mind-boggling, but I do have some complaints and am frankly disappointed in Ensoniq. Like Jack Rillings, who wrote complaining of new products being released with no advanced word, I am annoyed. Had I known a VFX would be released a few months later with a disk drive and expanded drum sounds with 24-track sequencer, I would have waited and purchased that. I'm annoyed, but I can live with it because that's the way the business world works. They need need to get VFX's into production and sell them to keep the cash flow going so they can continue to refine the VFX-SD and get into production so they can refine a rack-VFX...etc. What I can't condone is releasing a product before it is finished. My VFX software version is 1.65 and the thing is full of so many bugs it's ridiculous. 33% of the time (at least!) the keyboard won't function - I get a "keyboard calibration error" message and the keyboard is disabled. Since I have the ESQ-1 MIDI-ed to the VFX I can play the VFX sounds via MIDI, but the patch-select buttons are dead and you can't hear voice edits. I do home sequencing so I can work around this.

Another major problem is the fact that it crashes frequently. I play every day and at least once a day the foolish thing locks up, random notes sustaining indefinitely. Power down; power up; pray. I could go on and on with the symptoms, and Ensoniq would reply, "Get the latest software version." The point is, if I shell out \$2000 I expect a product that works! Don't tell me to update; an update should be a refinement, not the operating system you promised in the first place. I'm sure all of these problems will be corrected eventually in the future updates, but since I invested in your product in the early days, why should I be penalized? The closest Ensoniq dealer (where I bought my machine) is a one hour drive one way. Why should I spend 2 hours of my time driving, another hour or two at the dealer, and at least \$25 to get what I should have gotten in the first place? And don't tell me my situation is unique. I've read what other VFX owners have written to the Hacker. Mine behaves equally strangely. Numeric values change at random; new patches are selected without my touching the keypads, while playing a patch, some oscillators are spontaneously muted, causing the synth to go into "compare" mode; the list goes on and on.

I'm not writing this to get answers to my problems. Obviously, these problems will be corrected in the future software updates. My question is: why was this synthesizer

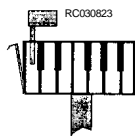
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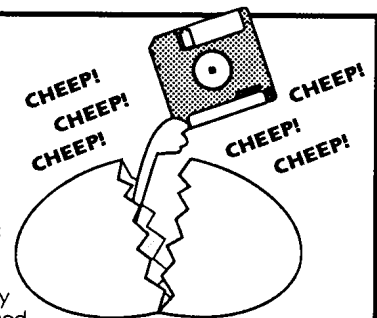
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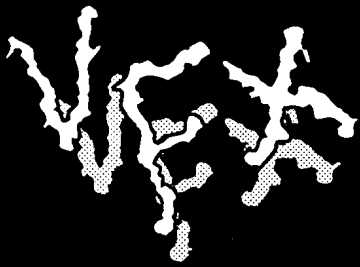


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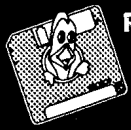
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released with such a bug-riddled operating system? Are you going to tell me this is what everyone does? From a company I expected big things from, I'm disappointed. Also, Ensoniq took off as a real player in the game with Mirage because it addressed consumer needs well, with some limitations, at a great price. Should you abandon quality, you are finished. I sense a drifting away from the very people who buy and support you, and as one who really likes and pulls for you, as many others do, I hope you won't stop listening to the criticism, as this is the feedback you need to make your products competitive. Enough said.

Here's some random notes about TH:

1. Everyone agrees Sam Mims is great and deserves a raise and with the new Ensoniq products on the market, why not expand Hackerpatch from two to four pages? And come on already, let's see the format for VFX patches. I've got some killer patches I'd like to share, so let's get rolling, Hacker!

2. Chris Barth's patch reviews are excellent; his references to specific bands' sounds lets you know exactly what you going to get. Unfortunately, I'm not too impressed with his articles on synthesis and I would favor more from Jim Johnson. I like Clark Salisbury too, and would prefer he write about more serious things; using two pages of the Hacker to relate how vibrato is accomplished by an LFO is pretty stupid, don't you think?

3. I think the Hacker is great; it provides different viewpoints, new ideas, gripes and solutions; a place to speak with friends.

Thanks!  
Stephen J. Munro  
Guilderland Ctr., N.Y.

*[TH - There should be plenty of Sam in this issue - along with the VFX patch sheet. We plan to make this a regular feature (assuming people send patches - there may be a hiatus between publishing the form and getting some back). Probably the biggest single factor delaying this patch form was just getting a VFX into Sam's eager little mitts.]*

*We try to maintain a mix of articles aimed at various levels of familiarity with the different instruments and electronic music in general. Clark's article (Issue #52) was a good intro to VFX modulation techniques.]*

*[Ensoniq's response - We are sympathetic to your situation and apologize for the trouble you have encountered. We certainly attempt to wring out all the problems we can find before shipping a product, but we may not catch certain problems before they get into the hands of customers, who may approach the product differently than our testers. A major part of your problem sounds hardware-related, a malfunctioning keyboard can cause many of the problems you have described.]*

*We do stand behind our products and have recently begun a program (VFX version 2.0) to recall and update early VFX units to improve their electrical and mechanical reliability, audio fidelity and software functions. Contact your local dealer for more information.]*

Dear TH,

This letter is principally addressed to Ensoniq, but I think the rest of the Hacker readership will be interested in my request. I am writing to ask Ensoniq to make the source code and other technical information of the **Mirage** available to those people who wish to purchase it. My argument is that if Ensoniq is no longer manufacturing the Mirage and that because of the DOC custom IC, the possibility of piracy of the sampler is very small. If there is no threat to Ensoniq's income, their sale of the source code and technical documents allow those people who wish to retain their Mirages and modify the software to be able to do so, without Ensoniq having to commit staff to supporting a discontinued machine. Additionally, selling the sources would provide extra income which wouldn't normally have been there.

I am aware that companies such as Upward Concepts sell monitor disks and partial disassemblies of 0.8 3.2 and that it is already possible to hack the operating system. Having the source code will simply make the job of modification easier and would be a very useful addition to a Mirage hacker's library. I feel Ensoniq would have a large enough potential market to consider making the technical documentation available.

The presentation of the information would not be a normal user market. At the very least, making a disk of the source code available would attract my request; Ensoniq's support of the Mirage has been to date very good. If the source code is made available to those who wish to modify the operating system. The support for this discontinued machine can be carried on by third party vendors who wish to do so.

All those Mirages must go somewhere, and if support for the machines is strong it ensures they will continue to be used and so advertise the Ensoniq name. In the PC market many CP/M machines and the IBM machines are supplied with the source code to their ROM BIO'S, with perhaps more risk to the manufacturers investment than Ensoniq, so why not the source code to OS 3.2 and MASOS?

Sincerely,  
Leigh Smith  
Darlington,  
Western Australia

*[Ensoniq's response - It's not really an issue of proprietary information, we simply don't have the resources to gather, collate and distribute this information or to maintain it in the field. Perhaps as we grow we may be able to address this issue in the future.]*

*[TH - Maybe if some enterprising third party were to ask them nicely if they could take this load off their hands...]*

Dear Sirs,

I have recently acquired a **Mirage**, and am desperately looking for a program called "Mirage Sound Lab," by Blank Software. I've tried writing to Blank, but have received no reply. If anybody out there has a version of this program for the MAC SE, I'd be very interested in purchasing it. Also, I'm looking

for any other MAC/MIDI/Mirage/CZ/TX81Z/HR-16 software and shareware.

P.S There are a lot of old Mirages out there, and a lot of them are now being bought by "new" sampling freaks, so it might be an idea to run a series of articles that encapsulate what the older machines are all about, and how to make the most of them. After all, these machines are not being thrown out quite yet, and these people getting into it via secondhand Mirages might also be the people that soon upgrade to a VFX.

Thank You,  
Heiko Meins  
(No address.)

[TH - Just about all of the early articles on the Mirage are available in one form or another. Check out our back issue list and people selling copies (and used software!) in the Classifieds. We try to keep covering the older instruments with whatever new info we can get, but we'd feel real funny using valuable page space to regurgitate old material.]

Dear Hacker,

So I finally got a 4X after having the EPS since April '88. I'm tremendously impressed. Never have we been able to do so much. Here are some questions.

1) When I had the main board swap done, the EPS came with a copy of 3.5. Thanks, but how come six months later everyone's talking about OS 2.4?

2) Do my ears deceive me? Did I hear an EPS in a top 40 song? Or songs? I thought I heard a factory sample or two.

3) Do the creators of source data receive a royalty? What does the copyright symbol on Ensoniq disks cover? If I release a single with a purchased sample in it can I be liable to the sample's source?

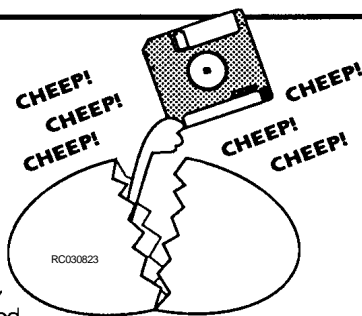
4) I have a file called HYDE PARK. I only wanted the bass drum, so I selected the sample number and looked at the sample start and end. It ended at 16 so I opened it to 99, held down the key and heard all samples of HYDE PARK one after other as though they had been spliced together. At first I thought the worst, most terrifying thoughts, then recalled something about it being a Mirage sample. It made me wonder if I should try splicing a bunch of samples, copying and assigning it to various parts of the keyboard and adjusting sample start and end times. Maybe this is one of those questions whose answers is "If you find a unique ability of the EPS, use it." Or don't.

5) I'll make a sample parameter change, save it to disk then when reloading later, from time to time, the unchanged instrument loads. Why? Why not send me 2.4?

6) Track 1-preset \*O is copied to track 3. Track 3 plays \*O which may not be the sound desired so select a preset, click inst/track, put record mode-ADD, hold RECORD, press PLAY, wait for selection to play through, keep NEW and you get track 3 playing the sound selected except when changing a track to 00 from \*0,0\* or \*\*. One solution is to change layers within the

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Chris Barth, Review, 6/89

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present but....

7) If the EPS is through a OEX-8 and then assigned to 8 channels on a mixing board, does a sample on RANDOM PAN pan randomly through the mains if its track is panned center?

8) How do I make the EPS save sequences mixdown info like channel volumes and panning when in \*\*SONG\*\*?

Thanks for everything.  
Yours truly,  
Terence V. Fiorito  
Thunder Bay, Ontario, Canada

[Ensoniq's response - 1) You must be referring to O.S. system 2.35. Perhaps there was a typo on your label? The current Operating System is indeed 2.4 and you will be notified if and when that advances further.

2) We're sure that you did. Many top artists and producers are using the EPS (and VFX products) on recordings and on stage. Besides our Signature Series artists we know of many other pros such as the Miami Sound Machine, Prince, Jam and Lewis, Jeff Beck and the B-52's are actively using Ensoniq gear (to name but a few). Good ears!

3) Ensoniq does compensate all of our developers for their work, the copyright symbol simply means that the actual sound and sequence data on our disks are protected. You can make back-up copies for your own personal use and are free to use these sounds on your own recordings. The issue of ownership of samples is a thorny one, our main dictate is that you cannot duplicate our factory disks for distribution purposes. Our dealers are required to sell our sound disks and they cannot freely copy them for the public. We attempt to provide the highest quality/price ratio in our libraries and feel they are a great value. The dollars you spend go right back into sound development and developer royalties - copy a disk and you take that money out of the program.

5 + 6) We can't answer these questions without more information. Please contact Ensoniq customer service directly so we can help you.

7) Random panning does not send voices to the solo outputs. It pans each voice randomly within the Main outputs only. Note that Track panning will override any instrument panning information.

8) It is not possible to record pan changes on the EPS, however mix volume can be recorded in a song by following the procedure outlined on pages 68 and 69 of the Advanced Applications Guide (AAG).]

Dear TH,

I've been getting the "Hacker" for some time now and find that I've got them laying over the music room. TH has been a very valuable source of information for me on how to do things on the EPS. Well, after some time using the Hacker and the EPS I find that I've looked through four, maybe five, copies to find the information that I've been looking for. Needless to say this is time consuming and makes my studio look like a disaster

area. Well, Hacker, I've got an idea that will keep my room clean and help out all the Ensoniq users world wide find the info we need. Why don't you print a glossary at the end of each year or every 16 months listing articles and where we can find them. I'm sure all of us Ensoniq users would be grateful for this. How about it TH?

Now I've got a question for Ensoniq. What I would like to know is how do you set up the EPS to transmit via MIDI to two different synths at the same time on two different channels on the same instrument on the EPS? I've got synth "A" on bass channel 2 and synth 2 on channel 12. The MIDI is set up from the EPS MIDI out to synth A in. From synth A MIDI through to synth B MIDI in. Both synth's are in the POLY MODE. I can change programs on each synth but I have to use two instruments on the EPS, one for each synth used. If it would be possible to "layer" these MIDI channels on one instrument on the EPS it would be very handy to have during live performances and save instruments space for loading other instruments or voices into the EPS. If it was a matter of not having enough space in the OS why don't you dump the copy/restore or split up the OS onto two different disks. One for the basic system and the second disk for extra goodies you don't need with you when you perform.

Example: why don't you put all the editing features on the second disk? I've had my EPS for some time now, and, as of yet, have not used the edit features of any sort on the job. I'll be waiting for your reply. RC030823

Steve Calewarts  
Green Bay, WI

*[TH - You should have been here before we printed the contents on the cover! We do make available (for free) a "Back Issues Index" which is basically a photo-reduced compilation of the last couple year's worth of Table of Contentses. (Is that a word?) Anyway, you can have one of these to speed your search a little. Have you ever written a index?]*

*[Ensoniq's response - The EPS is not designed to be able to do what you outlined. Each MIDI instrument you set up on the EPS must have its own MIDI channel and associated parameters. If your main reason for needing to keep the two external instruments on separate MIDI channels is to call up specific patches then it might be possible to move the programs to new locations or remap the incoming program changes at the external instrument.]*

*As we have explained on numerous occasions there is no more room in the O.S. for controlling additional overlays or adding functions. Creating and supporting multiple custom operating systems is a logistical "nightmare" that we simply cannot undertake with our current resources.]*

Dear Hackers:

A few months ago, I made a marvelous discovery. Quite by accident, I found a way to

get a bunch of extra "waveforms" into the beloved ESQ-1. I played around with these mysterious beasties for a few days, and was able to come up with some fabulous sounds - otherwise unattainable with the normal waveforms. "Here's a new set of sounds to market," I thought, "sounds that no one else can create." With visions of Ferraris and Malibu mansions dancing through my head, I phoned Jane at the Hacker to break the news.

"Oh yeah," she said, "we just got an article on doing that." Suddenly, the Ferrari drove off a Malibu cliff. Remarkably enough, after years of ESQ existence, it seems that at least four people made the same discovery at the same time. Soon after I talked to Jane, Mark Fusco had a letter in the "Interface" (October). Then Gary Sterling's article was published in December. And in the midst of that, submitted to Hackerpatch was a patch from Kirk Slinkard using these new waveforms. What a fascinating moment in the history of the ESQ!

Mark and Gary achieved the new waveforms by plugging an SQ-80 cartridge into the ESQ-1; the keyboard then looks to "undefined" locations in the wavetable to retrieve the waveforms. This gives 75 waveform locations, rather than the standard 32, and is the safest procedure. I was able to create 255 waveform locations, by intentionally crashing the keyboard (kids, don't try this at home!), saving the corrupted data, and then re-initializing. Then I access the corrupted wavetable, and program away. I suspect this is how Kirk did it as well, for he uses WAV129 and WAV130 in his patch. The problem here is that much more than the waveforms are corrupted. Filter data, envelope data, and other parameters go pretty wacky.

While most of the new "waveforms" are useless noise, the exciting part of all this is that a fair number of them are quite useful. And even though the cat's out of the bag, I'm now finishing up what will be Soundset 3, exclusively for the ESQ-1 (not the SQ-80), utilizing these strange waveforms. While I had been able to achieve D-50-type sounds with the standard waveforms, I've been able to go even farther in that direction with these new thingies. And the data loads successfully into at least some other operating systems, though I haven't tried them all (I'm using 3.5). I don't want this to sound like a free ad, but the sounds I've been able to come up with are better than what I could do with the standard waveforms!

This is all pretty exciting to me, and represents a definite highlight in the history of this wonderful keyboard. And just when I thought I'd figured this synth out...

Sam S. Mims  
Syntaur Productions

*[TH - Have you heard about the "hidden" 16 Meg of ram in the Mirage?...]*

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## E

Edit  
Active layers, 37  
Basics, 37  
Note length, 33  
Page, 37  
Pitch, 33  
Pitch table, 17  
Sequence, 40  
Song, 40  
Song steps, 9  
Track event, 33

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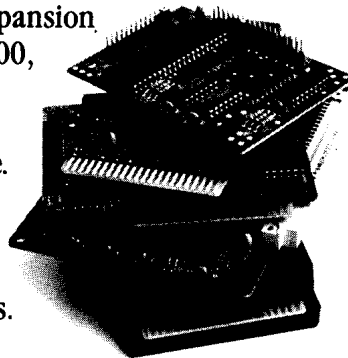
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