TRANSONIQ HACKER

The Independent News Magazine for Ensoniq Users

Ensoniq Introduces SQ-1 Personal Music Studio Keyboard

Ensoniq Corp.

Ensoniq's new SQ-1 is a complete music studio in a compact keyboard. This innovative production instrument comes with high fidelity sounds, 24 bit effects, a 16 track sequencer, mixdown capabilities and an affordable price tag, perfect for writing new music or just playing great sounds.

The SQ-1 holds 180 internal sounds featuring outstanding drum and percussion sounds (including 20 drum kits in ROM). In addition, the SQ-1 includes some of the most popular keyboard, synthesizer and brass waveforms from the Ensoniq's VFX and VFXSD. The superior sound quality of the SQ-1 comes from the 121 sampled acoustic and synthetic waves used to create the broad range of instruments. Besides acoustic and synthetic waves, the SQ-1 features Ensoniq's unique Transwaves™ which offers a movement and harmonic complexity that makes music come alive.

The SQ-1 also adds digital effects processing for a full range of effects possibilities. Various reverb, chorusing, flanging, delay, distortion and even roto-speaker programs provide dynamic control over many of the settings. Adjusting the Mod wheel will change the size of the room and pitch bend can adjust delay allowing effects processing to become an integral and expressive part of the keyboard's sound and performance.

The SQ-1's 16-track sequencer operates in the same intuitive, user-friendly manner characteristic of Ensoniq keyboards. Recording can be done in real time as you play or enter difficult parts in step-entry. Auto-locate and range editing options center in on a specific bar, beat, or even individual note to play back or edit. A wide range of other editing features allows you to modify parts or experiment freely—even audition different ideas against the original track to decide the best approach.

Sound and sequencer data for the SQ-1 can be stored on credit card-style memory cards, and sequencer memory can even be expanded from 9,000 to 58,000 note capacity with the optional SQX-70 kit. The sequencer track buttons also double as performance controls to combine multiple internal and external sounds to quickly create layers, splits and overlaps.

For a home music studio that combines multiple instruments, digital effects and recording capabilities—look to the Ensoniq SQ-1. It's a complete Personal Music Studio—for a lot less than you might imagine.

Suggested Retail Prices
Ensoniq SQ- 1: $1595.00
SQX-70 memory expander: $349.00
Product Availability: April 1990

Keyboard
- 61 key (C-C) with programmable velocity sensitivity
- Up to 8 programmable keyboard zones for splits and layers

Controllers
- Programmable dual footswitch input for sustain, sequencer start/stop, and other assignable functions

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- Pitch and Mod Wheels
- Mod/Volume Pedal input

Internal Sound Memory
- 180 sounds available without a memory card:
    - 80 RAM sounds
    - 100 ROM sounds including 20 dedicated drum and percussion sets

Card
- 160 additional sounds available on each ROM/RAM card

Waves
- 8 Megabits (1 Megabyte) of waveform ROM
- Over 1100 variations possible from the 121 wave selections, which include:
    - Multi-sampled piano, strings, brass, and bass waves with timbre shifted versions
    - Sustained synthesizer waveforms with harmonic and inharmonic structures
    - Transwave™ spectral interpolation waves with real-time modulation
    - Acoustic and electronic drums including kicks, snares, tom-toms, hi-hats, and cymbals
    - Percussion waves including Latin percussion, world music percussion, orchestra blasts, fingersnaps, tambourine, and others
    - Modulatable start point and forward-backward playback mode on most samples
    - Pitched or fixed frequency playback of all waves possible

Voice Architecture
- 21 dynamically assigned voices with programmable voice priority
- A single Sound can use up to 3 waves per key simultaneously (Drum sounds can use up to 17 drum voices)
- Programmable voice delay up to 250 msec
- 2 independent multi-mode dynamic digital filters per voice (low pass, high pass, variable bandwidth band pass)
- 3 five stage envelopes per voice w/13 parameters per voice
- 17 preset envelope templates for ease of programming
- One LFO per voice
- 15 modulation sources routable to Pitch, Filter 1&2, Volume, Wave Start Index, Effects mix and others

Performance Preset Parameters
- The combination of up to 8 sounds, special performance parameters and an effects setup can be saved as a Preset
- Performance parameters include Volume, Pan, Timbre, Key Zone, Transpose, Release Time and others

Output
- 16-bit D/A conversion with 96dB dynamic range
- First-order linear interpolation for wide transposition range
- Linear phase output filters
- Stereo panning per voice

Digital Signal Processor:
- Custom VLSI 24-bit digital signal processor (ESP chip) w/48-bit accumulation
- Programmable stereo effects processing with dynamic performance control capability
- Multiple effects including Reverb, Chorus, Flanging, Delay, Distortion, Phase Shifter, Roto Speaker and combinations
- Three stereo busses allowing for dry, individual or grouped effects processing

Sequencer
- 16 polyphonic tracks (including 8 "Song Tracks") each with separate Sound, volume and MIDI channel/status
- 70 Sequence/30 Song structure
- Over 9,000 note capacity standard, expandable to 58,000 with optional SQX-70 memory expansion kit
- Clock resolution of 96 PPQ
- Song form provides up to 99 Steps with up to 99 repetitions for each Step (each Sequence Track in a Step can be individually transposed and/or muted for memory-efficient use)
- Tracks can play internal Sounds and/or external MIDI instruments
- 3 real-time record modes (Replace, Add, Looped) and Step-Entry recording possible
- Post-quantization (auto-correct up to 1/64th note triplets)
- Automated punch/edit points remembered for each Sequence
- Step editing, bar/beat/clock and key range editing, transposition, time-shifting, append, extract, change length, track merge, filter/scale controllers
- All editing can be auditioned before saving changes
- Auto-locate controls, adjustable click track, Tap Tempo control
- MIDI Auto Mix (automated mixdown) feature records all volume/panning changes for each Track

MIDI:
- Omni, Poly, Multi, Mono A and Mono B modes
- Multi-timbral, accommodating up to 8 simultaneous polyphonic MIDI channels with separate sounds and performance parameters
- Responds to global controllers in Mono modes for use with alternate controllers (MIDI guitars, wind controllers, etc.)

Inputs/Outputs:
- 1/4" phone jack connectors:
    - Left and Right audio outputs (connecting either singly provides mono output)
    - Separate headphone output
    - Single/Dual footswitch input
    - Pedal/Control Voltage input (allows modulation from external sources)
- MIDI connectors:
    - MIDI In/Out/Thru

Optional Accessories
- MC-32 and MC-64 RAM data cards (stores sound and sequencer data)
- SC and ISC series ROM sound cards
- SW-5 Dual Footswitch—2 pedal piano-type for sustain pedal, sequencer start/stop, etc.
- CVP-1 (CV Pedal)—for voice modulation or volume control
- SQX-70 sequencer memory expander (expands memory from over 9,000 to 58,000 note capacity)

Prices and specifications subject to change without notice.

Front Panel

RND (♪♪♪)

Hacker News:

Well, the big news (as you've no doubt already noticed) is the introduction of the SQ-1 (The Squirt?). A new hot keyboard from Ensoniq. We'll be trying to jam more information about it in up-coming already-crowded issues. Looks like a potentially very broad user base...

Speaking of crowded—you'll also note that *The Interface* is busting its seams. There's been a few changes there that we hope you'll like. Check it out. (Hopefully, the size of this month's Interface is a temporary situation. Even though it's a very popular feature, we'd rather it didn't take over.)

Sam Mims has asked us to remind VFX owners to send in their patches! (New readers might want to order Issue #55 for the VFX patchsheet.)

We're also starting to see some third-party support for the VFX. (There's even a VFX Stack out for the Mac—see the *Classifieds*.) Anywho... We're looking for someone interested in reviewing third-party sounds for the VFX. If you think you might fit the bill, please give us a call.

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 Swanston, 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.

EPS QUESTIONS - Garth Hjelte. Rubber Chicken Software. Pacific Time (WA). Call anytime. If message, 24-hour callback. (206) 242-9220.

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).

MIRAGE 24-HOUR HOTLINE - M.U.G. 212-465-3430.

ESQ-1 QUESTIONS - International, Brendon Sidebottom, (03) 689-5731 Australia. No calls between 4 a.m. and 10 a.m. Australian ES Time.

SAMPLING & MOVING SAMPLES - "Mr. Wavesample" - Jack Loesch, (201) 264-3512. Eastern Time (N.J.). Call after 6:00 P.M.

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

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

MIRAGE OPERATING SYSTEM - Mark Cecys. West-Coast Time. Days. (408) 253-8547.

MASOS - Pete Wacker. Whenever. (602) 938-0906.

HYPERSONIQ

NEW PRODUCT RELEASES

Syntaur Sounds brings new waveforms to the ESQ-1! For the first time ever, a set of commercially available sound patches has expanded the available waveforms in a wavetable synthesizer—without requiring any hardware modification whatsoever. The ESQ-1 has 32 waveforms stored in ROM, and it is these waveforms upon which all the sounds are built. *Soundset 3* causes the ESQ-1 to look elsewhere in memory for its waveforms; the result is over 250 newly available sound sources. In addition, other "impossible" parameter settings, such as Octave values of +6, are used. The drawback is that *Soundset 3* data only works correctly on ESQ-1s with the latest O.S.—3.5. (Most, but not all, will work on 3.4.) *Soundset 3*: 40 patches, data cassette or Mirage-format disk: $17.95. 80-Voice EEPROM (with either Sounset 1 or 2 also included): $59.95. Extensive programming notes and patch sheets. Syntaur Productions, 11116 Aqua Vista #2, North Hollywood, CA 91602. Phone: 818-769-4395.

RomeoSounds by **R & D Sight and Sound** is a new collection of production quality sounds for the Ensoniq SQ-80. These sounds are written by a professional programmer and are designed to elevate the SQ-80 to its full potential as a musical instrument. The available sounds include acoustic instrument simulations, electric pianos, organs, sound effects, pads, "space sounds," and a compilation of sounds which are compatible with the ESQ-1. Demo tape available for $8.00. All orders shipped on Maxell 3.5" disks (or data cassette for the ESQ-1) w/demo sequences, descriptions, and performance suggestions. For additional info: R & D Sight and Sound, 7 Elm St., Middlebury, VT 05753. Phone: 802-388-7570.

Tested and Approved Hard Drives for the EPS

MANUFACTURER	MODEL
Rodime	45plus, 60plus, 100plus, 140plus
CMS	43SD, 20SD, 30SC, SDU30
Microtek	Nova40
Eltekon	OVD-20, 30, 40, 50, 60, 80, 90, 120
General Computer	Hyperdrive FX/20
Mass Micro	Mass 30e
Supra Drive	MacPlus 20

Cesium Sound

!! *Now* !! *New VFX Sounds* !!

Professionally programmed by Nick Longo,
most with multiple Patch Select variations.

Volume 1, grand and hybrid pianos, tine pianos, B3 organs, basses, guitars, saxes, and tuned percussion

Volume 2, lead and power synths, pads, sweeps, layers, hits, unique timbres, and exotic percussion

Volume 3, Phenomenal orchestral strings, brass, choirs, ethereal and atmospheric washes, solo and ensemble acoustic instruments.

	one	two	three
EPROM cartridges	$55	$100	$130
VFXSD, EPS, SQ-80 disk	$40	$70	$90
Patchloader™ disk for Atari ST, Mac, or IBM compatible	$45	$80	$110

PatchPro™ librarian with Volumes 1-3 **$125**
Atari ST, Mac, or IBM compatible

EEPROM cartridge with any volume $120

TX81Z sounds on cassette or disk

"I'm really impressed with your voices for the TX81Z. A few are among my favorite electronically generated sounds, quite an accomplishment considering the TX81Z is a relatively low end tone module." letter to Cesium Sound

8 volumes (256 sounds) on cassette, Opcode, TX81ZPro EPS, SQ-80, VFXSD, or MDF-1 disk $30

Patchloader™ disk for Atari ST, Mac, or IBM compatible $40

Demo cassettes for VFX, ESQ-1, SQ-80, D-50, or TX81Z libraries are $5.00 each. Sound lists with descriptions for any of the above are $1.50 each.

Shipping charges are $3.00 per order in the US, $4.00 per order to Canada, $6.00 per order to any other country. CA residents must include sales tax charged in your county.

The Ultimate ESQ-1 Library

"Some of the patches are nothing short of stunning and are worth the price alone." letter to Cesium Sound

80 Voice Cartridges	40 Voice Volumes
A	1. Acoustic Keyboards 2. Electric Keyboards
B	3. Electric Guitars and Basses 4. Plucked Strings
C	5. Drums and Percussion 6. Pitched Percussion
D	7. Lead Synths 8. Synths Pads
E	9. Analog 10. Modern Rock
F	11. Techno 12. Metallic
G	13. Bells 14. Gongs, Jars, and Glass
H	15. New Age 1 16. New Age 2
I	17. Spectral 18. Space
J	19. Abstract Effects 20. Imitative Effects
K	21. Singing Voices 22. Strings
L	23. Woodwinds 24. Brass

Non-erasable EPROM cartridges A-L

each	four	eight	twelve
$25	$90	$160	$220

All 960 sounds on cassette or disk $96.00
Available on data cassette, Mirage, EPS, MC-500, MDF-1 C64 librarian, and most librarian formats or loader disk.

The Complete SQ-80 Library

"these patches SING. They have a lustre and presence I have not heard on ANY of the nearly 1600 patches I have collected." letter to TRANSONIQ HACKER

40 Voice Volumes on disk

1. Keyboards
2. Guitars and Basses
3. Lead Synths
4. Synth Pads
5. Analog
6. Techno
7. Modern Rock
8. Metallic
9. Drums
10. Pitched Percussion
11. New Age
12. Crystalline
13. Space
14. Bells and Voices
15. Harps and Strings
16. Brass and Woodwinds

one	two	four	eight
$12.00	$20.00	$30.00	$50.00

All 640 SQ-80 sounds $80.00
All 1600 ESQ-1 and SQ-80 sounds $128.00

D-50 ROMs RAMs and disks

"Nick Longo the programmer has made an outstanding contribution I cannot believe am hearing a product of synthesis." review, EM

1. Top 40
2. Analog
3. New Age, Space
4. Orchestral

	one	two	four
ROM cards	$50	$90	$160
RAM card with any volume	$80		blank $70
All four volumes on disk	$80		

Available for librarian formats, MDF-1, MC-500, or Patchloader™ disk

Programmable EEPROM cartridges for ESQ-1, SQ-80

80 voice with any two volumes	$50	blank $40
160 voice with any four volumes	$75	blank $60

ESQ-1 Memory Expander **call for price!**

EPS SAMPLES

Clean, clear, *memory efficient.* Each disk, numbered 1-52 has two to ten sounds, most under 400 blocks.

D-50

1.) Keyboards
2.) Basses
3.) Synths
4.) Pads
5.) Ethereal
6.) Pitched Percussion
7.) Woodwinds
8.) Strings

M1

9.) Acoustic Keyboards
10.) Electric Keyboards
11.) Basses
12.) Brass
13.) Woodwinds (sax)
14.) Atmospheric
15.) Drums and Percussion

Minimoog

16.) Synth Bass
17.) Lead Synths
18.) Synth Brass
19.) Pads and Strings
20.) Percussive

Drum Machines

21.) Roland 626
22.) Yamaha RX15, RX21L
23) TR808
24.) HR16 Kicks, Toms, Snares
25.) HR16 Cymbals
26.) R8 Kicks Toms and Snares
27.) R8 Cymbals and Percussion
28.) R8 Contemporary Percussion
29.) R8 Jazz
30.) R8 Special Effects

VFX

31.) Keyboards
32.) Basses
33.) Strings
34.) Percussion
35.) Hits
36.) Analog
37.) Atmospheric
38.) Spectral
39.) Sweeps

DX7II

40.) Keyboards
41.) Basses and Effects
42.) Mallets and Bells
43.) Plucked Sounds

Addt'l FM

44.) Keyboards
45.) Basses

K1000

46.) Pianos and Organs
47.) Chorus and Strings

K1

48.) Layers
49.) Instruments

"Real" Sounds

50.) Alto Sax
51.) Fender Rhodes
52.) Folk Guitar

Prices	14.50 per disk	4-7disks $12.00 each	8-14 disks $11.00 each	16-40 disks $9.00 each	all 52 disks, $369.00
Shipping	$3.00	$3.00	$4.00	$5.00	$6.00

Maartists 4X Expander, *call for latest price!!!* User installable, Ensoniq approved, 2 year warranty, shipping, $4.00.
Special deal! All 52 disks plus expander, $call!!! SCSI interface, call for price.

Demo cassette $7.50, sound list with descriptions $1.50. Send Check, MO, or call. COD $4.00 additional shipping, cash or MO only.
Cesium Sound, 1442A Walnut St. #300 Berkeley, CA 94709. (415) 548-6193.

Freak Out Your Sound Engineer

By Kirk Slinkard

Back in 1989 I went to see the traveling Ensoniq clinic at my local music store and witnessed something intriguing. The clinician played some samples of some familiar audio malfunctions and suggested that they can be used to annoy sound engineers. It occurred to me that most of these sounds could also be easily duplicated on the ESQ-1 or the SQ-80.

I don't normally do malicious or vengeful things, but this clinic reminded me of a sound man that used to work with me. He had a really nice public address system but didn't know how to use it. He had a nice flanger - but refused to hook up a phaser for fear of being disintegrated. Most sound engineers are decent, competent people, but this guy was really an exception. Anyway, just in case you have this guy working with you (or, if you're simply evil), here are some patches that sound like common audio problems.

HUM and BUZZ are the sounds of 60 Hz grounding problems. Play these anytime you want someone to think something has developed a bad connection. Try playing rapid staccato notes when they jiggle a cable or an effects device. FEEDBK (feedback) is the sound of a microphone turned up too high. Try this one when there's not even any microphones hooked up to really drive an engineer bonkers. NOISE has the most subtle effect of the sounds. You could try this one while an engineer is adjusting volume levels for some other instrument.

Disclaimer: The author and this magazine assume no responsibility for damages and/or injury resulting from the use of these programs. ▬

ESQ-1 PROG: FEEDBK

BY: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+2	10	22	SINE	KBD 2	-63	KBD 2	-1
OSC 2	-	-	-	-	-	-	-	-
OSC 3	-	-	-	-	-	-	-	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	49	ON	OFF	-	OFF	-
DCA 2	-	OFF	-	-	-	-
DCA 3	-	OFF	-	-	-	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	64	0	0	ENV 4	+63	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	KBD 2	+63

	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	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	0	0	45	0	0	16	0

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

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

ESQ-1 PROG:HUM

BY: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-3	6	5	SQR	KBD 2	-63	KBD 2	-1
OSC 2	-	-	-	-	-	-	-	-
OSC 3	-	-	-	-	-	-	-	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	OFF	-	OFF	-
DCA 2	-	OFF	-	-	-	-
DCA 3	-	OFF	-	-	-	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	15	0	0	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	KBD 2	+63

	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	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+63	0	0	0	0	0	0	0

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

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

ESQ-1 PROG:BUZZ

BY: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-3	6	5	SAW	KBD 2	-63	KBD 2	-1
OSC 2	-3	0	0	SQR	KBD 2	-63	LFO 1	-20
OSC 3	-	-	-	-	-	-	-	-

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

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	95	31	0	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	KBD 2	+63

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

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

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

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

ESQ-1 PROG:NOISE

BY: Kirk Slinkard

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-2	0	0	NOISE2	LFO 1	+63	KBD 2	-63
OSC 2	-	-	-	-	-	-	-	-
OSC 3	-	-	-	-	-	-	-	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	32	ON	OFF	-	OFF	-
DCA 2	-	OFF	-	-	-	-
DCA 3	-	OFF	-	-	-	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	127	0	0	WHEEL	-63	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	KBD 2	+63

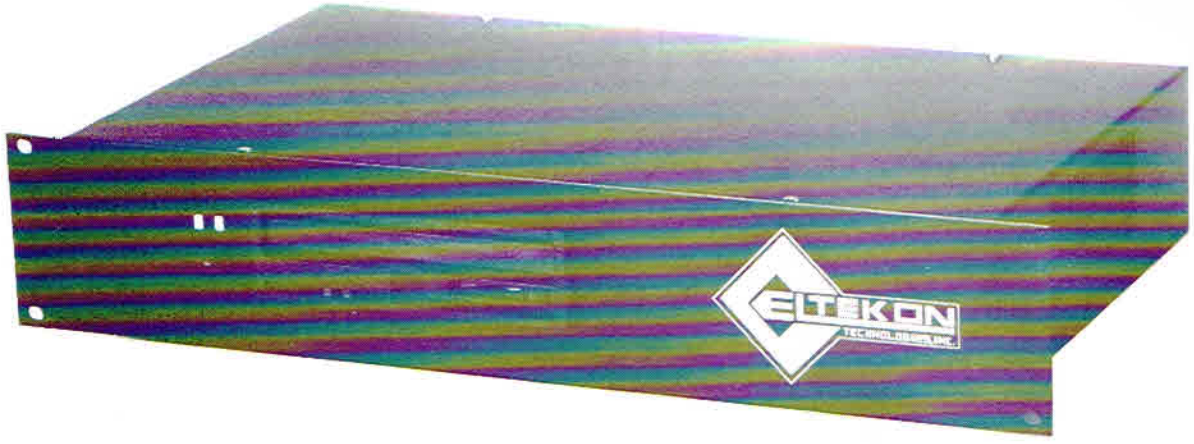
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	63	OFF	ON	TRI	63	0	0	LFO 2
LFO 2	58	OFF	ON	NOI	63	0	0	OFF
LFO 3	-	-	-	-	-	-	-	-

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

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

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

MASS STORAGE SOLUTIONS FOR THE ENSONIQ EPS



Removable Mass Storage!

RX-2: A rackmounted removable hard disk drive. The RX-2 holds one removable hard drive with room for one fixed drive. Eltekon's RX-2 offers high performance potential with a fast access time (20 ms), an 8 K on board buffer memory, and autoparking/locking heads. The RX-2 is shipped with one 44 megabyte data cartridge.

Send Your Ensoniq EPS Into Overdrive

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The Uses (and abuses) of Polyphonic Aftertouch

by Charles R. Fischer

One of the most unusual features found on recent Ensoniq keyboards is the infamous polyphonic aftertouch (included on the EPS, SQ-80, and both versions of the VFX). Depending on whom you talk to, this goodie is either A), a gift from the gods that allows unlimited new forms of musical expression, or B), an appalling pain in the rear.

Personally speaking, I'm somewhere in the middle on this controversy. While it's a terrific idea in concept, I believe that the design hasn't been taken as far as I would like. (But then again, I feel the same way about MIDI.) Using this feature introduces a swarm of potential problems that must be addressed before we can explore this new tool.

In this article, we'll talk about using polyphonic aftertouch; how to tweak patches to take advantage of the possibilities that it offers, and ways of minimizing the nasty side effects that it introduces.

Velocity vs. Aftertouch

There are two types of expressive controls sent out via MIDI that are found in most of today's instruments: velocity and aftertouch (also known as pressure sensitivity). Because the two are frequently confused, I'll take a moment to discuss them. Velocity is the force used when you initially strike a chord or note. It's similar in concept to the mechanism used in an acoustic piano; only the energy used to strike the key has any effect on the sound quality or volume.

Aftertouch is a whole 'nother critter altogether. It ignores that initial force that is used to measure key velocity; however, once that key (or keys) is held down, a pressure sensor underneath the keys senses whenever you lean into the keyboard with a little extra pressure, which allows you to create all sorts of neat tricks (bring in vibrato, open up the filter, etc.).

There's another area of potential confusion here, as well. There are two kinds of aftertouch covered under the MIDI specification: channel and poly. Channel has been fairly commonplace since the success of the original Yamaha DX-7. Instruments using channel aftertouch utilize a single pressure sensor, which measures the finger pressure; the average pressure is used to modulate all of the voices sounding simultaneously. This is usually selected for economic reasons, as the sensors used for this purpose were fairly expensive. A drawback to using channel aftertouch is that since all of the voices are being modulated in parallel, your bass line is gonna get the same heavy vibrato as your right-hand solo! Not too terribly musical... but adequate.

Polyphonic aftertouch is considerably more involved on the engineering side of things. As a separate pressure sensor is required for each key, additional circuitry must be added as well. This allows all sorts of neat expressive tricks (in theory, anyway). Imagine playing an 8-note chord and making one or two notes stand out by applying a little extra finger pressure. Sounds chillin', doesn't it?

Unfortunately, the's a few unwanted side effects that must be considered as well...

The Bad News

Before we all run out and proclaim poly aftertouch as the true solution to the alleged "lack of expression" in electronic instruments, there are some very real problems that go along with the use of this feature. One of the worst of these offenders deals with handling the vast quantity of data generated by using polyphonic pressure over MIDI.

The MIDI specification defines both types of aftertouch as "continuous controllers." Like other variable elements like the pitchbend wheel, the mod wheel, foot pedals, and other goodies, the aftertouch data is transmitted over MIDI as a continuous series of numbers, which go from a starting position to an end point. The constantly changing nature of this type of controller has a tendency to "clog up" the MIDI line; while pitchbends and channel aftertouch is bad enough, poly aftertouch can really put a monkey wrench into your system!

Let's say you're playing a 5-note chord, using a controller with channel aftertouch. You're sending out a long stream of data down the MIDI cable every time you lean into the keyboard for a little extra modulation. When you switch over to poly aftertouch, you can suddenly expect hell to break loose—multiply that stream of messages by the number of notes that you're playing. This type of overload often manifests itself as a noticeable delay time in slave modules hooked up to your controller. That is, if they'll respond at all. Certain instruments are infamous for locking up in the presence of poly pressure messages, including the Roland D10, D110, and D20, and the Sequential Circuits Prophet VS (although there's probably others as well). The Roland units actually have to be powered down and reset before returning to operation; this is obviously not desirable! Of course, you can always set your controller to transmit channel aftertouch—but this robs you of the advantages of the polyphonic design.

In other words, these anomalies can result in serious problems within your MIDI setup, including timing delays, crashes, and similar out-and-out disasters. To be fair, these anomalies appear to be the fault of the limited bandwidth of the MIDI specification (in the case of timing bottlenecks) or other manufacturers not paying close enough attention to the MIDI specs (in the case of Roland and Sequential Circuits). Most instruments that are not equipped to handle poly aftertouch will simply ignore it (as with my Roland MKS-50 and Oberheim 6R)-- while that's not ideal, it's certainly better than a MIDI trainwreck.

A second, and much less serious problem, involves the quantization of the aftertouch data. Most inexpensive pressure sensors generate an analog voltage, which is digitized by other circuitry so that it can be used by the instruments' microprocessor. In Ensoniq's case, this job is not done as well as I'd like to see, resulting in the aftertouch response being chopped into a staircase-type response rather than the smooth action that would be desired.

This staircase effect can be very troublesome, depending on where the aftertouch is being routed. For example, if you use the aftertouch to bend the pitch of a DCO, you'll probably hear what I'm talking about right away (due to the human ears high sensitivity to variations in pitch). However, in other places, such as filter sweeps or applying vibrato, this effect is much less noticeable.

User Hints

Thanks to the wide-open architecture of our instruments, we're pretty much free to use either type of aftertouch to control any

parameter of interest. With so many options, it's probably reasonable to look at some of the choices.

One of the most popular uses is to control the amount of vibrato (or modulation). With poly aftertouch, each note in a chord can have a different vibrato depth, which is a good way to keep vibrato out of your bassline (which sounds awful lame to these ears). To do this, we must find out which LFOs are being used for vibrato (by looking at the three DCO pages), and changing the LFO modulator to PRESS on the appropriate pages.

Try it out. Call up a favorite horn patch, and take a peek at the three DCO pages to see which LFOs are used for vibrato (LFO 1 is used most often, although many patches use multiple LFOs to increase the illusion of several players). Let's say that LFOs 1 and 2 are used here. Go to the LFO 1 page and press soft button #10 (lower right-hand corner). Change the modulator from its present setting to PRESS. Do the same for LFO 2 and you should be in business. If the aftertouch doesn't seem to be working, go to MIDI page and make sure that it hasn't been disabled. If the vibrato depth seems to be extreme, you can go back and lower it to +01 or +02 on the DCO pages.

Another neat trick is to use the aftertouch to control the cutoff frequency of a filter (read: brightness). To do this, go to the FILTER page and assign one of the modulators to PRESS. Program a depth (start around +32), and you're ready to go. Negative values will cause the sound to get duller as finger pressure is applied.

One last stunt is to use the aftertouch to vary the mix between multiple DCOs. This is especially handy for adding "breath" to flute sounds, or bringing in feedback on an electric guitar patch. To do this, assign PRESS to the three DCAs, and assign a negative value to the "primary" sound (try -08 to -20). On the secondary sound, give the aftertouch a positive value of the same amount. The aftertouch will simultaneously lower the level of the primary sound while bring up the level of the secondary sound. The resulting crossfade is an interesting way of adding animation to a bland patch.

Here's the Fixes

• To adjust the overall aftertouch sensitivity, look towards the MASTER page on your SQ-80 (EPS and VFX owners, please read your owners manual to see how you can do likewise). See the upper right hand of the display, where it says, "TOUCH= SOFT 1" or something similar? While the word ("SOFT, MED, FIRM, HARD"), is used to adjust the velocity response to your particular tastes, the number afterwards sets the pressure response itself. A setting of one has the greatest sensitivity; higher numbers require increased finger pressure to respond. Experiment with each setting; while the differences are subtle, finding the right one can go a long way in preventing unwanted side-effects like "hyena vibrato" or the dreaded "blue finger."

• Because aftertouch uses up a significant amount of your sequencer memory if you're not careful, try to develop the habit of turning it off whenever you're recording tracks that don't use it!

• If you've already cut sequences with the aftertouch enabled, and find yourself in dire need of more memory, you can get it back using the "REM CNTLS" (remove controls) feature found on the Track Edit page of the sequencer. Unfortunately, this operation will also erase other activities as well (including pitch and mod wheels, foot pedals, etc.). This is a sad fact of life, and will probably teach you to check the aftertouch status BEFORE cutting any new sequences.

• When recording sequencer tracks for use with an offboard tone module, try setting the aftertouch status to "CHANNEL" as often as possible; this will help to thin out the amount of data sent down the MIDI river, and help to minimize any bottlenecks.

• Another way of avoid taxing your system to try and set as many tracks using aftertouch to "LOCAL" status as possible. Again, this won't be a viable option all of the time... but the less stuff you have going down your MIDI cable in the first place, the less chance you'll have of unwanted side effects.

In spite of these obvious gremlins, polyphonic aftertouch is a great idea, especially in the hands of an experienced and tasteful player (actually, sometimes it's even better in the hands of the not-so-experienced and tasteless). The hard part, again, is to take an innovative and unprecedented feature, and adapt it to work for you musically. Ensoniq should be congratulated for providing us with this potentially powerful controller; now it's time for the musicians and programmers to get out and make some music with it.

BIO: Charles Fischer has the unfortunate problem of being gifted in skills that provide meager hope of earning a decent living; to remedy this, he is presently the Senior Electronics Technician at Ondyne, Inc., a major manufacturer of industrial hygrometer systems. ■

For the EPS and Mirage:

The Cleanest, Most Inexpensive Digital Delay in the World

by Bryce Inman

First, the bad news: this little trick only works with non-looped sounds (percussion, etc.). Now, the good news: since this is all done within the keyboard itself, the inherent noise which is added by plugging into an outboard delay unit is eliminated. This means that the delay will be as clean as the original sound. Best of all, it's free!

Think about it for a moment - what does a digital delay do? It samples an incoming signal then plays it back at a specified interval, fading out at a specified rate. It occurred to me that there is a relatively simple way to reproduce this effect with a sampler. The trick is this: take a non-looped wavesample, add some sampled silence to the end of it, loop the entire wavesample and use the envelopes to create a fade.

Now that you know the trick, I could end right here. However, since I'm paid by the word, I'll take you through the process step by step.

The basic process is the same for the EPS and Mirage. The steps are different enough, however, that it would be easiest to list them separately.

MIRAGE

1. Boot up with MASOS then load the sound you want to manipulate. For this experiment I'll use a bongo drum found on the Lower half of the Latin Percussion sounds on Ensoniq's disk #16.

2. Now that we have our sounds loaded in the Lower half, we need to sample silence in the Upper half. To do this, set Sampling Threshold (76) to 00 so sampling will begin as soon as you press ENTER. Press SAMPLE UPPER then ENTER to begin recording. If your sampled silence turns out to be a bit noisy (sounds like a bit of an oxymoron, doesn't it?) try sampling with Line/Mic (75) ON or use the Fade In and Fade Out functions to reduce the digital noise.

At any rate, the Upper half of memory should be silent. You may want to save this to disk for use in the future.

3. Now we need to move the bongo sample to the Upper half. Make sure you're working with the Lower memory and set Wavesample Select (26) to the wave you want to move (3 in this case).

Before we can move the wavesample, we need to set a few parameters. First, you'll need to make note of the values for Wavesample Start (60) and Wavesample End (61) (30 and 3F in this case). Set the pointers accordingly - Source Start (85)=30 and Source End (87)=3F. Finally, set Destination Start (89) to 00 and Destination Bank to UP (Upper). This tells the Mirage to copy the bongo to the start of the silence in the Upper half.

Everything's ready, so let's move the wavesample. Press the MASOS function key (LOAD SEQ), then key #1 (Copy Data), then ENTER. At this point we should have a wavesample in Upper memory that plays the bongo followed by sampled silence. You may want to tune the wavesample now using the relative tuning adjustments - (67) and (68).

4. The next step is to loop the sample. Set the Loop Start (62) to 00 and Loop End (63) to FF - this will loop the entire sample. Now turn the Loop Switch (65) ON. Play a note and you should hear the bongo followed by silence repeated over and over. If the amount of delay to too long, simply set the Loop End to a lower value. If it's too short, you're out of luck - you are limited by the amount of memory in the Mirage.

5. To put the proper fade on the wavesample, we need to adjust the envelopes.

Something like this should be pretty close:

40=00	50=00
41=10	51=10
42=00	52=00
43=00	53=00
44=24	54=19

6. Be sure to look at the variation listed at the end of this article.

EPS

1. To make things easy, let's set it up so that the wavesample with which we are working (I've chosen a bongo) is Wavesample #1 of Layer #1 in Instrument #1. If there are any other Wavesamples or Layers, delete them.

2. Now we need to sample silence. Press Sample (insert the O.S. if the EPS asks for it) and select Instrument #1. The word NEW should be underlined which is what we want. Using the down arrow, move the asterisk (*) all the way to the left so sampling will begin as soon as you press YES. Scroll to Sample Rate and set it to its lowest setting (6.25) - no need for good fidelity on silence. Press Yes and let the EPS sample for a few seconds then press YES or NO to end sampling. Press YES to tell the EPS the sample is okay. Any note will do for the root key.

3. The next step is to connect the silence to the end of the bongo. It would seem that the "Splice Wavesamples" command would be best for this, but I had troubles getting this to work correctly. If we were going to do this, we would have needed to sample the silence to a Layer other than Layer #1 since this function only works with wavesamples that are layered. I've found that the Copy Data command works wonderfully for this operation.

Press COMMAND the LFO, scroll to Copy Data and press YES (once again, the EPS may ask you to insert the O.S. disk). Set the parameters as follows: FR INST=L LYR=L WS=2 (the silence) START ADDR=00 (00) END ADDR= n (99). Press YES. Wavesample #1 should now contain the original bongo followed by the sampled silence.

4. Time to loop the wavesample. Press EDIT and make sure that wavesample #1 is underlined. Press Wave and scroll to Loop Forward. Now scroll to Loop Start and set it to 00 (00). Scroll to Loop End and set it to n n (99). Now play a note and listen to the results. If the delay is too long, simply reduce the value of Loop End. If there is not enough delay, turn the loop

off and repeat the steps in step #3 to copy the silence from sample #2 to the end of wave #1 again.

When you have the correct amount of delay, move the Sample End to the same value as Loop End and truncate the wavesample. Even sampled silence takes up memory. You should also delete wavesample #2.

5. Now it's time to simulate a fade with the envelopes. Press EDIT then Envelope 3 and select either the Piano Decay or Percussion preset. This should be a good starting point for the effect you want - you can fine tune the parameters from there. You may need to adjust Envelope 2 for the filters also.

6. One more adjustment to consider: if you want the delay effect to trigger automatically each time a key is depressed (that means when a key is played - not when a key is sad), scroll to the Envelope Mode page of Envelope 3 (and Envelope 2 if applicable) and change the setting to Cycle. If you want more control of the effect, leave the setting at Normal so the delay effect will only be heard if you hold the key down.

A COOL VARIATION OF THIS TRICK

Here's something else to try: either find a percussion sample that has been sampled with lots of reverb or create such a sample. Now loop the entire sample. If this doesn't provide enough delay, add a little silence to the end as we did previously. Set the envelopes for a fade out, and now you have reverb and delay without hooking up to any outboard gear.

Now that I've simulated a digital delay, my wife wants me to simulate a trip to Hawaii. Maybe I'll just sample a Don Ho record. ▬

Tape—A Cheap Memory Expansion for the EPS

by Tim O'Connor

If you're like me, you have waited patiently for the price of 4X memory expansion kits for the EPS to come down and have been sorely disappointed. After paying $2300 for the keyboard and 2X expansion, it's a bit painful to have to chuck out another $500-$900 in order to do some serious compositional work. Not to mention this makes your 2X cartridge completely obsolete (they don't even make good hockey pucks). What I am proposing is not a direct substitute for the 4X, but an inexpensive alternative which actually gives you more capability than the memory expansion. You already have it. It is, in fact, the lowly cassette deck.

You will need to purchase a MIDI-to-tape sync converter box. JL Cooper makes one and there are others. I have seen used ones for sale for as little as $100. What these boxes do is convert the MIDI sync code from a sequencer to some type of audio pulse train which can be recorded onto magnetic tape. In playback mode, the pulse train is then converted back to MIDI sync which then drives the sequencer. With a stereo cassette deck, you will be using one channel to record the sync signal, and the other will be used to offload the EPS.

The procedure is straightforward: load as many sounds into the EPS as will fit, and sequence the parts. Some thought should be given to which parts will be recorded onto tape. If possible, choose sounds which won't suffer too much from being recorded. Sounds without a lot of high end (bass, piano, etc.) will work the best—also, since you will be losing the stereo field (unless you've got a multitrack deck) choose non-stereo instruments like solo and lead voices instead of lush, stereo pads. Once the entire song has been recorded onto tape, the entire memory of the EPS may be re-used. Rewind the tape and set the sequencer clock from INTERNAL to MIDI. New instruments may be loaded in, new sequences recorded which will then play along with those recorded onto tape.

Tape? ANALOG TAPE?? How crude! How nineteenth century! NOBODY uses tape anymore! Actually, I would guess over 90% of all CDs were originally mastered on analog tape. Besides, you are only doing development work here. You can always borrow a friend's Nakamichi, HIFI video, or DAT deck when you are ready to create your demo. If you have a digital reverb which generates a stereo output signal, this can dramatically enrichen the single mono tape track.

I have a minor beef with Ensoniq's output expander kit. Sure, eight outputs is better than two, but they didn't take it far enough. Since the EPS is capable of playing eight STEREO instruments at once, it seems to me the output expander should deliver eight STEREO outs, or sixteen in all. In the recording studio, using the MIDI-to-tape sync you can achieve the same result by recording one STEREO track at a time by soloing one instrument each pass. Sure this will take longer, and in the studio time is money, but this technique will work and gives the effect of sixteen (or more) outputs.

If you haven't realized it by now, by using just one track of a stereo cassette deck and sync box you have not only doubled the effective memory of your EPS, but you have also doubled to forty the available voices (something the 4X expander can't do) and doubled to thirty-two the number of sequencer tracks (another bonus). Not to mention being able to add vocals and other non-keyboard sounds which then can be harmonized against in the final mix. By carefully mixing the single tape channel with the first generation voices from the keyboard and running it all through a stereo reverb, you should be able to create rich orchestrations with a minimum investment in hardware. ▬

VFX Grab Bag

by Jim Johnson

Hoo-boy. Long time no see, hmm? Those of you who remember the last episode in the story of my affair with the VFX have probably been wondering whatever happened to the promised article on Dynamic Component Synthesis. Well, as luck would have it, several unfortunate events have conspired to keep me away from the Hacker for a few critical months. However, these are all behind me now, and I'm back at the word processor. This month, we'll talk about a variety of things, including how to blow up your VFX, Ensoniq's version 2.0 software for the VFX, and a misunderstanding that several other contributors to this magazine are (unwittingly, I'm sure) helping to perpetuate.

As always, winter here in Phoenix has been a little chilly, and very dry. Anybody who has experienced this kind of weather knows all about static electricity, and those nasty little jolts that you get anytime you touch something. In mid-December, I started to notice that the shocks I was getting were a lot more potent than they had been in the past. Sometimes, when reaching for the doorknob, I would get shocks on several fingers separately—and they didn't just annoy, they actually hurt. Once I was putting a disk in my ST's drive, and a spark jumped from my finger to the computer's plastic case, and caused it to re-boot! This should have been an adequate warning that something was wrong, but, foolish me, I ignored it.

About this time, my VFX started acting funny. After it had been on for a little while the display would lock up. It would still play, but it ignored all front panel commands. Turning it off for a few seconds usually brought it back to life, so I simply assumed it was a software bug, which I could afford to ignore until the next rev came out. Well, as time went on, this became more and more serious, until eventually, the machine wouldn't work at all. Just great. So I put in a call to one of my contacts at Ensoniq's engineering department (one of the advantages of writing for the Hacker), and explained the situation. "Hmm," says he, "it sounds like your display processor is dead." I asked if that could happen due to severe static shocks, and got the expected affirmative response.

My instrument was still under warranty, so I mumbled something about taking it back to the dealer for repairs. To this, my engineer buddy replied, "Well, we're just now finishing beta testing on the VFX 2.0 update. If you'd like to test it for us, you could just send your instrument directly to us, and we'll install the update and save you some time." Another advantage of being a Hacker contributor. So I bundled my VFX up in its original box, and went through a tearful goodbye scene at the nearest UPS office. Well, to make a long story short, I eventually got my VFX with the 2.0 update (of which you'll read more in a minute), but about this time, I made an important discovery.

Thanks to my aging beagle's bladder control problems, I've been making more frequent trips outside during the day, and because of this, I had been wearing my shoes in the house (I usually take them off at the door). Finally, after a particularly numbing series of shocks in my studio, I made the critical connection. Rubber-soled shoes... carpeting... dry air... no wonder I was getting mega-zapped anytime I touched something! So I started taking my shoes off every time I came in the house—and the nasty shocks stopped immediately!

This is an experience I will never repeat, and if you're smart, neither will you. If you live in a dry climate, and have a carpeted studio, here is a cardinal rule for preventing ESD (electrostatic discharge) damage to your precious instruments during the winter months: ALWAYS REMOVE YOUR TENNIS SHOES BEFORE ENTERING YOUR STUDIO!

Now about that VFX 2.0 update—this is the kind of deal that will make everyone glad that they bought an Ensoniq product. The upgrade to 2.0 involves more than a simple ROM change—in addition to the new operating system, the ESP signal processor must be replaced and recalibrated, and all of the front panel buttons must be replaced. When the upgrade is completed, your VFX will have several new effects (including a distorted rotary speaker effect, and several new reverb algorithms), a more reliable front panel, and more solid software. And the kicker is that this upgrade is available free of charge to all VFX owners! The downside, of course, is that because of the complexity of the changes, your synth will have to go back to Malvern, PA for a few days. Now before you go popping your synth in a box and sending it to Ensoniq, I need to pass on the fine print about this deal. Specifically, you should see your dealer and arrange for them to send the instrument back. This way, Ensoniq can schedule the updates in such a way that they aren't stuck with a huge pile of instruments waiting for the upgrade, while their owners silently fume over the glaring holes in their keyboard stacks. If you live in an outlying area, light-years away from the nearest dealer, Ensoniq will be happy to arrange for shipment, via UPS ground service, as long as you call their customer service department for a return authorization number first.

Now about that misunderstanding: I've noticed recently that many musicians seem to be pretty confused by Ensoniq's "timbre" control. First of all, many people don't seem to understand what "timbre" is, and secondly, the details of the timbre control in the VFX can also be a bit of a mystery.

Most of the confusion over the timbre control stems from an inaccurate impression of what timbre is. I was very embarrassed one day to see an article by a fellow Hacker in which it was stated, "These (the basic components of a sound) are pitch, timbre, and volume." Sorry, guy, but that is wrong, wrong, WRONG! The three basic components of a sound are pitch, waveshape, and volume, and the way that these three components change over time is what determines their timbre. For example, if you start with a basic sine wave, and give it a volume envelope with a moderately slow attack and release, you would end up with a timbre that could be said (charitably) to resemble that of a flute, while if you were to use a volume envelope with an instantaneous attack and a slower release, you might say that the timbre is similar to that of a xylophone. Same waveshapes, but different envelopes, and therefore different timbres.

This definition helps us understand why Ensoniq chose the term "timbre" for that particular controller. The timbre control is a general-purpose performance controller that can be used to change any aspect of the instrument's sound, or even several at once. Of course, you can do this with any performance con-

troller, including the mod wheel, CV pedal, aftertouch, or XCTRL, but by assigning the name "timbre" to this controller, Ensoniq is in effect saying that this is the controller that we programmers should use to let a sound gradually evolve from a fuzz guitar to a clean guitar, or from a muted trumpet to an unmuted trumpet, or from a squizbat to a leptoker. Not that we have to, or anything, but at least this way the guy playing the VFX will have at least a rough idea of what will happen when he pushes the timbre slider.

The data for the timbre controller can come from one of three sources. First of all, the VFX recognizes MIDI controller 71 as the timbre controller. If you have some kind of programmable slider box (such as JL Cooper's FaderMaster or Lexicon's MIDI Remote Control), you could set this box to produce controller 71 from one of its sliders, and control timbre remotely. This is probably the preferred method, since it gives you a dedicated physical timbre controller. Second, if the SLIDER parameter (on the second MASTER page) is set to TIMBRE, the data slider can be used to adjust timbre whenever a bank page is displayed. I recommend that you always leave SLIDER set to TIMBRE, since it doesn't eliminate any of the instrument's functions, and it does give you that timbre slider at the time when you'll probably need it most. However, this can be a bit of a pain to use during a programming session, since the slider affects timbre only on the bank pages. If you're looking at a part of the sound and accidentally reach for the timbre slider, you'll change the setting of whatever parameter is selected. This is why I recommend the use of a dedicated slider on an external controller if possible. Finally, timbre can also be adjusted from the Timbre page in any of the instrument's three modes (Sounds, Presets, or Multi). The use of this page in Presets or Multi modes is pretty obvious, but in Sounds mode it is a bit more obscure, though it is still straightforward. If you push the Timbre button while in Sounds mode, the timbre of the sound that is currently selected will be controlled by the VFX's data slider. Note that, when you use the data slider to control timbre, the VFX will send data on MIDI controller 71, so you can record timbre changes in your external sequencer.

One little facet of the timbre controller may not be obvious at first. Any time you store a program in the VFX, the machine stores the current timbre setting as part of the program. This means that, if your timbre slider is at a non-zero value when you save a program, and if you recall that program, then moving the timbre slider will cause a little hiccup in the sound as the timbre jumps from its stored value to its new value (as set by the slider). This is really no worse to deal with than the alternative, which would occur if the timbre value were not saved with the sound, but it may cause a little confusion at times if you're not aware of it. The best solution I can think of, in a sequencing environment at least, is to always store your sounds with the timbre set to zero, and to make sure that your timbre curves in your sequencer always start at zero after a sound is recalled.

Applications for the timbre slider abound. The simplest thing to do would be to have the timbre controller affect the same parameter in all six voices of a sound—for example, to increase the cutoff frequency of a high-pass filter. A more imaginative application might be to have the timbre slider raise the volume of one voice while decreasing the volume of another. Perhaps timbre could be used to control the difference in the cutoff frequencies in a high pass and low pass filter pair in a single voice, thereby simulating the effect of a resonance control on a band pass filter. (To do this, set the cutoff of the low pass filter somewhat higher than that of the high pass filter, and use timbre to increase the frequency of the high pass while decreasing that of the low pass.) Remember that since timbre can be used to control the dynamic effects as well as the voices themselves, you can combine any of these changes with a simultaneous change in the effects—perhaps decreasing the chorus depth drastically while increasing its speed slightly as the slider is moved, or something like that.

Well, that's all I have to say for this month. Next time we WILL talk about Dynamic Component Synthesis, and why it is more than a buzz word. Even if I do lose all of my sounds again. I promise. ▬

Current Ensoniq Operating Systems

INST	OS	DISK	EPROMS
EPS	2.4	X	
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	2.1		X
VFX-SD	1.37		X

Bizarre Applications Of The CV-Pedal Jack

by Sam S. Mims

Ensoniq thoughtfully provided keyboardists with a 1/4-inch jack, labeled "Pedal/CV," on the rear panels of the ESQ-1, the SQ-80, the EPS, and now the VFX. For quite a while, I never used a CV pedal. Why should I? The mod wheel is always close at hand, and anything the pedal can do, the mod wheel can do. Besides, I had enough sustain pedals cluttering up the floor already.

Well, I soon learned better. First of all, the pedal can do something the mod wheel can't do—it can act as a global volume controller. This is done by setting PEDAL=VOL (on the Master page for the ESQ-1, SQ-80, and VFX, or on the Pedal page, while in Edit, System on the EPS). This alone may be reason enough for grabbing the CVP-1—after all, it retails for only $29.95. But I found out that using the pedal as another modulation source (PEDAL=MOD on the Master page)—in addition to the mod wheel—is a wonderful application. The extra expression this can add to a sound is fabulous—and addicting. In short, the CV pedal is an inexpensive addition to your keyboard that you will use constantly. If you haven't done so already, go get one.

PUT THE PEDAL TO THE METAL

When a CV pedal is plugged into your keyboard and used as a modulator, it allows you to alter sounds without robbing your left hand from the keys. On the ESQ-1 and SQ-80, the pedal can modulate the oscillators, detuning one or two to create a chorus, or it can shift all three modulators up or down by any interval up to two-and-a-half octaves for transposing and other effects. By using PEDAL as both modulators on each oscillator, you can transpose all the way up to the planet Skyron—or at least out of the range of hearing.

With PEDAL used to modulate the VCAs, it is possible to fade one oscillator in and the others out, thus cross-fading between sounds. This works just as well with layered sounds. The VCAs are also a good place to use the CV pedal if you need a volume pedal on a particular patch, but need the pedal to modulate other sounds.

In Filterland, the CV pedal allows you to do manual filter sweeps, brightening or darkening a sound on the spur of the moment. Or the pedal could be used on the DCA4 page for "Moving in Stereo"—a push of the pedal can send your sound rushing to the right or left speaker.

PEDAL can also be applied as a modulator to the LFOs, to control the extent of their "wiggling" when they are routed to any of the aforementioned destinations.

With the VFX, the CV pedal can do these chores and a multitude of others, and the extra modulating help is even more welcome. For instance, many effects parameters can be changed in real-time, such as the decay time of a reverb, or the switching of the ROTO SPEAKER (Leslie) effect from slow to fast. You can use the pedal to sweep through the transwaves, or to vary the speed of an LFO. Additionally, the pedal can be used as one of the Mod Mixer/Shaper sources, to create unique modulator shapes.

THE HARDWARE

With the ability to do all these wonderful things with the CV pedal, you'd think there might be a lot of stuff jammed into that CVP-1. But as wonderful as it is, there ain't much to it. Inside is one single component—a 10k potentiometer (10,000 ohms). Three wires lead to this pot from the pedal's stereo (three-conductor) phone plug; the tip of the plug connects to the pot's wiper (the center solder lug), while the ring and sleeve connect to the opposite ends of the winding (the two outside solder lugs), as shown in Figure 1. That's it for hardware.

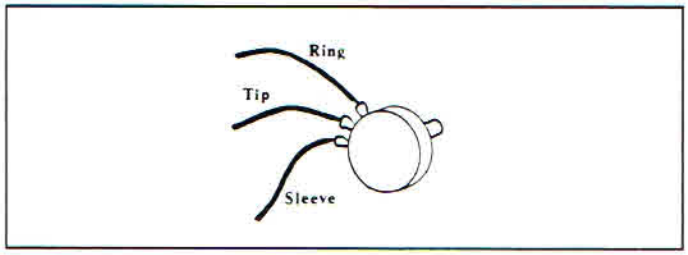

Figure 1.

What runs through the wires is as follows. The ring carries 12-volts DC out from the keyboard to the pot; the sleeve is the ground. The tip carries the modified voltage back from the pot to the keyboard. Pretty simple!

GETTING BIZARRE

What this simplicity means, at least to an incurable tinkerer like me, is that it's easy to get nutty and do bizarre things with this CV pedal input. The simplest thing, perhaps, is the ability to replace the CV continuous pedal with a simple switch. Simply wire up a SPDT (single-pole, double-throw) switch with the ring and sleeve connected to the outside solder lugs, and the tip connected to the center one. Then, solder a 10k resistor between the outside lugs (Figure 2).

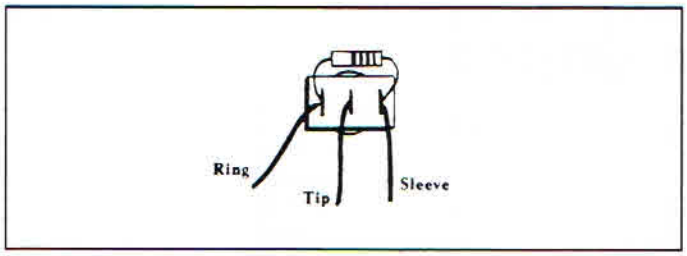

Figure 2.

What you do with such a switch is your business, but here are a few demented suggestions. First of all, you can use it as a Leslie slow/fast switch mounted on the keyboard, a more natural mechanism for B3-ists than the foot pedal (which means "volume" to an organ player). Or you could use such a switch to do all your key modulations (using PEDAL as a modulator on the oscillators), flipping it at the appropriate climactic moment. The mechanism could be a micro-switch, mounted in your right Reebok, toggled with a slight upward motion of the big toe.

While I am being half silly here, I'm also being half serious. Remember Laurie Anderson's drum suit? Keyboardists could create similar apparel by sewing a 10k pot into, say, the knee of a pair of pants (the back side), so that whenever the leg is bent, the sound gets modified in some way. Lean back (bending at the

knees), and the filter gets brighter, or a vibrato at a different speed from the modwheel vibrato is introduced. Or build a breath controller that incorporates a 10k resistive device, and play your ESQ like a DX-7.

Another approach to the CV jack is sending it an external voltage, rather than using the voltage supplied at the ring connection. The keyboard wants to see a 0-10 volt DC signal, with the positive voltage connected to the tip and the sleeve grounded. This allows you to use as a modulator any device that outputs this type of voltage. I'm not exactly sure of the practical uses here, but it's fun to speculate. And, just maybe, it could be useful.

So what puts out such voltages? The immediate thing that comes to mind is the control voltage from an analog synthesizer. Here is a DC voltage that varies (one volt per octave, normally) depending on the note that is played on its keyboard. By sustaining a note on the Ensoniq board, you could double a line played from a Minimoog, for instance. (This would require programming the Ensoniq patch with PEDAL as a modulator on the oscillators, with the AMOUNT determined by the specs of the other synth. Experiment and see what works.)

Another thing that puts out this flavor of voltage is a lighting console with analog outputs. These are almost always 0-10 volts with the highest numbered pin the ground, and the other pins the voltages for each of the lighting channels (pin 1 for channel 1, etc.). Again, I'm not sure offhand why you would want the brightness of lighting channel 17 as a modulator of your VFX's reverb decay time, but the possibility does exist. And it really works—I tried it.

Finally—and perhaps most usefully—another thing that sends out such a voltage is an Ensoniq CV pedal. That sounds pretty obvious, but here's why it's useful. I have an ESQ-1 sitting above a VFX, with a bevy of pedals underneath (including a CVP-1). To avoid having to have CV pedals for both keyboards, one pedal can serve double duty by plugging into one board directly, and feeding the other the output voltage from the pedal. To do this, make up a Y-cord like that shown in Figure 3, plug either male end into either keyboard, and plug the CV pedal into the female jack. Now, the single pedal controls both boards, quite a handy thing if you're using it for a volume pedal. For modulator use, you may have to program your patches so that the pedal works correctly throughout your set. Otherwise, you may modulate both boards when you only want to affect one.

The wondrous CV jack allows you to interface your keyboards with the non-MIDI outside world. Some of the uses outlined here are pretty odd, but they may be useful somewhere down that twisting road of life-in-the-music-biz. In any case, it's good to know what your stuff can do. I applaud Ensoniq for drilling that extra hole in the back panel. ▬

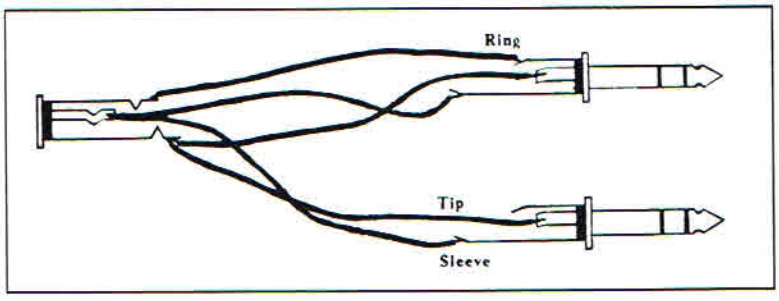

Figure 3.

Creating A Custom EPS Drumkit

by Daniel Merrill

If you're like me, a songwriter who bought the EPS as an all-in-one songwriting workstation, the first thing you'll have to do is get your rhythm section together because you sold that old drum machine and most everything else to come up with the cash. Oh sure, we all got the power drums and a few other kits when we bought it, but they may be less than exciting or useful despite some decent sounds contained in each. Immediately, I set out to sample new sounds and combine them with the best sounds from these disks into one drumkit.

I'm neither a studio owner nor a drummer so my drum sampling consisted of taking sounds from some of the great new drum machines that are out today, i.e., Alesis, Linn, Roland, (hey - what are friends for?) and saving them to disk. I originally sampled everything at 52 kHz but have since found, as you may have, that depending on the sound, higher sample rates are not always better or necessary. A few quick samples at different rates and your ears can tell you the optimum rate for that sound. Make sure when sampling you're in the 12 voice mode. Command System- scroll to Set # of Voices - *YES*- scroll to 12 - *YES*. This will give full frequency response during playback. Remember, lower sample rates use less memory. That is, a sound although equal in length, uses less of your precious memory at lower rates. It's your call.

Truncating

Now that you've got all these hip drum sounds, we've got to get them cleaned up and ready for the show. That means a shave and some respectable envelopes. The most effective method I've found of truncating is to go to the Edit-wave start address, (as always, have only the WS you wish to edit selected) and move the sample start point to the end of the sample. Now, while playing the root key, start scrolling backwards. What you are doing is playing the blank space at the end of the sample. Eventually, you will hear the end of the sound being played. When you do, change from coarse adj. to fine adj. and find the last sample before the sound comes in. Write this address down. Now reset the sample start to the beginning again. Be sure the fine adj. goes all the way to zero. Now go to the sample end address and bring it to the beginning of the sample. You will be able to find the exact sample start in the same fashion. Once you have located both the start and end addresses, set them accordingly. Listen to the sound. Depending on the fade out of the WS, you can sometimes move the sample end into the sound without adding a click or bump to the sound. Incidently, if you didn't use predelay when sampling, the beginning of your wavesample may have a click which can be removed by moving the fine adj. address one or two samples into the sound. I've found factory samples that are truncated sloppily, so before you copy them into your custom drumkit clean them up too.

Copying

First of all, we need to create a new instrument. Command- Inst.- Create New Inst- *Yes*- Select Unused inst- 1- *Yes*. You'll also need to create a layer. Command layer- Create new layer- *Yes*. Now, load into the unused tracks some of the drumkits you wish to draw sounds from, as well as the samples you have made yourself. As far as where on the keyboard to assign the different drums to when copying, it's entirely up to you and your designed use. I frequently interface with a Linn 9000, and wanted my sequences to trigger the appropriate Linn sounds, so I assigned my MIDI note #'s to match it. Pick your favorite kick drum and go to the Edit mode and select its WS by playing its corresponding key. Go to Command- Wave- and scroll to Copy Wavesample- *Yes*- To Inst- press track 1 - *Yes* . The screen now reads "Wavesample 1 Created." Your kick drum will show up in the new instrument on the same root key as in the instrument it came from. To change the root key, press the set keyboard range button, and play the key you wish to assign it to twice. Note the key, #, i.e. C2. Now go to Edit pitch and scroll the root key to match the C2. Now your sample is in the desired place at the appropriate pitch. Continue transferring your favorite snare, hi-hats, toms, etc., into your custom drumkit.

What if the sample you are about to copy is on a root key that you have already used in your new kit? We know the EPS can't play two samples on the same key in the same layer. No problem, you can still copy it. The EPS won't erase the current WS, although it won't play it either. As soon as the new wavesample is in new instrument, go to set keyboard range. There's no need to go to Edit mode because whenever a wavesample is copied into an instrument it always becomes the selected WS. Set the range as desired as well as pitch and presto... your missing WS is back.

Envelopes

So about those envelopes I mentioned earlier, without them those great sounding samples you made are going to play sounding like the world's first drum machine, no sensitivity or feel, and repeated attacks that crop off the one before it. Select one of your own WS's to work with. Go to Edit- Env 3 and scroll to Env Mode. Set this for cycle. This will allow the entire sound event to occur with only a quick keystroke. Most drums sounds will use the cycle setting, the exception being sounds like an open hi-hat that you may only want to fully open by holding the key longer.

Now scroll to Sav- Current Value. This is where we adjust the dynamics of the drum. Ensoniq was good enough to give us some preset templates to work from, so scroll up or down through them just to get an idea what they do to the sound. Scroll back to the percussion template. This is a decent envelope for most drum sounds, although I prefer to have a bit more dynamic range. To change the range scroll right to the Soft Vel and drop the value of each of these to around 50.

Once you've put envelopes on all your own samples, check the ones on the copied wavesamples, which already have their own. You may want to match them to yours. If some of your WS's are proportionately much louder than others, select the WS and go to the Edit Amp page and drop the WS volume. You can also scroll to the right and pan the WS anywhere in the stereo field, or to the solo outs.

Stereocity

Speaking of stereo, one of the things you'll probably what to pan are the tom-toms. I had a good sample of a tom and by going to the Edit pitch page, found it could be pitched enough

to get 3 differently tuned toms and still keep the integrity of the sound. So why waste memory with 3 or 4 full tom samples when we can just copy the params and tune them? Once the WS is in your new kit, select its WS and go to Command-Wave. Scroll to copy WS-*Yes*, To Inst- 1 -*Yes*, To layer-1-*Yes*, Copy Params only- *Yes*. This copied WS will show up on the same key as the original WS, so be sure to move this immediately, to avoid any confusion. Assign this first copy to the key one full step below the original. Make another copy and assign it to one full step above the original. These toms will be slightly pitched now because their root keys are the same but their key ranges are different. A more dramatic tuning can be obtained by going to Edit pitch and altering the root key. This tuning could have easily been achieved by setting the original WS to a wider keyboard range, but this way with very little memory loss, we have the ability to pan each tom to its own spot in a stereo field. This is done in the Edit Amp mode. Scroll to WS pan and assign it as desired.

Depending on the memory configuration in your EPS, you may wish to put multiple rock and snare drums in your kit to have them available at any time, or, if you have a 2X or less, you may find a kick, snare, and hi-hats to be enough. Either way, once you have recorded a sequence it's very easy to delete a particular drum from your custom kit and copy in a more appropriate one as needed. If you opt for a large drumkit with lots of WS's, it's one of the best instruments to go to when you're 30 or 40 blocks short of being able to load your piano to complete a sequence you're working on, just delete a few unused WS's and you're in business.

Save It

Just a few last things you'll want to do before saving this kit to disk. One, is to name it. Go to Edit- Inst- and scroll to Inst Name. After you've named it, scroll to Pressure Mode and set this for *Off*. This is important, especially for you heavy hitters out there, because otherwise you'd be recording unnecessary key pressure and using up major memory. Now save it to disk, and if all this hard work means something to you, you may want to make a backup disk also.

One last tip. Have you ever created a new sound, gone to save it and realized you don't have a formatted disk? When you go to the Format Disk Command it says- ERASE And Format Disk. If you are like me, that first word was enough to make you search through all your disks again to find room for your new sound, because we all know from reading that certain commands DO erase any current memory to perform their function. Never fear! This command is safe to use, and the word erase only pertains to what it will do to the disk.

I hope these tips answer a few questions you may have had. Happy programing, keep writing, and in all things, Get-ta Down, and Get-ta Funky.

Bio: *Daniel Merrill is a singer/songwriter for a Portland, Maine based pop group called* "Cornerstone." *Their first album was due out the end of '89. As far as the favorite color thing [who started this anyway?* (Ed. - It was Clark.)*]: being color blind, it's any of the ones that I can see well.* ▬

Classifieds

USER GROUPS

Looking for EPS owners to establish User's Group. Anyone interested in swapping sounds by mail please send name, address, phone number, and program list to: Cesar Soliman, 945 Kinney Way, Prosser, WA 99350. (509) 786-2323.

I would like to meet others in the Sydney, Australia area who own ESQ-1s. James Calcandis, 9 Reid Ave., Greenacre 2190, NSW, Australia.

SAMPLES

Medieval and Renaissance Instrument Samples! New 12-bit EPS versions and 8-bit Mirage versions available: Lute, Medieval Harp, Viols, Dulcimers, Handbells, Pipe Organs, Krumhorns, Rebec, many more. Please specify sampler. Barry Carson, Minotaur Studios, 52 State Street, Canton, NY 13617.

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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.

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EPS 2X MEMORY EXPANDER - FIRST $100 WINS! Original Ensoniq equipment bought new in '89. Free UPS shipping in U.S. with cashiers check. GILCO PRODUCTIONS, Miami, FL. 305-628-4321.

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For Sale: ESQ-M - I have two!!! $500 each, you pay shipping. Kendal (916) 534-5365.

EXPANDERS: 4X EPS, $389.00. **VFXSD**, $299. Fully approved. Other memory expanders available. **RAM CARTRIDGES: ESQ/SQ80**, $39.95 (80-Voice), $69.95 (160-Voice); **K1**, $49.95; **K3**; **ROLAND**; **KORG**; **YAMAHA**. FREE shipping. Five-year guarantee. **SOUND LOGIC**, 1125 Eleventh Street, Romona, CA 92065. (619) 789-6558 (Info); (800) 753-6558 (Orders).

For Sale: Mirage keyboard with factory disks and ATA flight case, $600. You pay shipping. Kendal, (916) 534-5365.

EPS ME1A SCSI ready 2X expander for sale. Includes manual. $175. Miguel Estrada. (603) 891-1942. Leave message.

Bought a VFX-SD, so I'm selling my ESQ-1 for $600. My Mirage goes for $500 + shipping. Phone: (616) 335-3253 mornings.

SQ-80 w/case, 3500 patches + 2 RAM carts. $975. (805) 965-0474.

For Sale! Ensoniq EPS 2X Memory expander w/o SCSI interface: $100. New in box. Yamaha DX-11 with case and 1000 sounds: $600. Used less than a month. Call Pierre at (913) 236-8986 anytime (home/office).

YAMAHA MT2-X 4-track cassette recorder with Dbx. Excellent condition, $275 or best offer. Tel: (207) 236-8941 until 10 pm ET.

Prophet-600 61-key, 600-voice arpeggiation MIDI synth, $475. Sonus Super-Sequencer-128 for Commodore-128, $125. Sequential Circuits Model 64 Sequencer for C-128, $75. Music Direct ESQ-1 librarian for C-64, $25. Worx ESQ-1 1800+ voices (two C-64 disks), $50. TEAC X-1000R 10" stereo tape recorder, $475. All mint-perfect. Prepaid insured shipping, c.o.d. if you pay shipping. Bert Evans, Box 6666, Jacksonville, FL 32236, (904) 398-6888 pm before 8 EST or weekends.

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Help!! I need a Pedal Steel Guitar with slide bar for my EPS/4X. Can you help? Al Trautman, PO Box 172, Lydia, LA 70569.

Wanted: Classical pipe organ samples for EPS. Will pay for diskettes. Any stops or combinations. Daniel Ochs, 527 Tilden Ave. Teaneck, NJ 07666, 201-692-9833.

Wanted: Original copy of Emerson, Lake, and Palmer "Anthology" music book. Includes "Pirates," "Fugue," Memoirs of an Officer and a Gentleman." Cash paid. Help! I'm desperate. Kyle Jarger, 255 North Rd., #72, Chelmsford, MA 01824. Days: (508) 486-3514.

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SOUND LOGIC ESQ-1/SQ-80 "Modular Voice System." 120 Stereo Voices - the Fundamental 80 plus the Unicorn Series I module of unique voices. Extensive implementation of CV Pedal and Poly-Key Pressure. 64-page Owner's Manual. All standard disk formats available. $39.95. The Unicorn Series II module available for $18.95. FREE shipping. SOUND LOGIC, 1125 Eleventh Street, Ramona, CA 92065. (619) 789-6558. For Orders: (800) 753-6558.

5,056+ DX711FD/DXTX7Sounds $29.95. SQ-80/ESQ-1: 840 Super Sounds $19.95. 1,030 NEW! V50/DX11/TX81Z/YS200/DX1002127 Sounds $29.95. P/H $3.00. MUSIC WORLD, 617 Panorama Dr., Grand Junction, CO 81503.

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CUSTOM DRUM SEQUENCES for Ensoniq EPS and Alesis HR-16. Your songs, your way. Any Style. Originals or covers. Jingles, singles, demos or full projects. Professional drummer/percussionist. Write "DJ" at MIDI-Evil Music, RR#3, Box 3404, Lake George, NY 12845.

EPS sequences available. Free demo kit upon request. See our display ad elsewhere in this issue. LB Music.

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 of all tunes, price & song list. Dave, 619-564-1080.

DOCUMENTATION

The EPS Users Guide. Don't delay! 190 copies left. Companion for Ensoniq's manuals. Price: $20 US. Shipping & handling: $2 US, $6 Canada, $15 Europe, $18 Australia, etc. Send check or MO to Gary Dinsmore, 6509 20th St. East, #1, Fife, WA 98424.

SERVICES

Costly updates, long distance phone calls, and countless trips to and from your nearest service center... and your Ensoniq device still doesn't work right? I can help! N. Alan Chilton, 712 S Melendres, Las Cruces, NM 88005. (505) 526-4862.

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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.

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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.

Before we get rolling this month, let me first make a plea to the masses. If you have an original patch or two that you think is useful, send it in and share it with the rest of the world! Experience instant fame! We have a fair selection of ESQ and SQ-80 patches at the moment, but we're always happy to get more. As for VFX patches, we're desperate! If you've got an original, don't keep it a secret.

A paragraph or two describing the program should be included, as well as a legible patch sheet. Even better, you can submit your data on cassette, Mirage disk, SQ-80 disk, cartridge, or IBM disk (Midiex or Ensoniq format); please include return postage for any items you want back. The address is: Hackerpatch, Transoniq Hacker, 1402 SW Upland Dr., Portland, OR 97221. Keep those cards and letters coming!

ESQ-1 Patch: LIGHT1

by Glenn Javaheri, Heaven

This is a patch from the discontinued Heaven collection, now in the public domain. The mod wheel adds a nice vibrato/chorus to the sound.

The Hack: LIGHT1 has a beautiful ambience created by a long release time (T4 of ENV 4) combined with a nice chorus that comes in just during this release. The chorusing is created by using another envelope (ENV 2) to modulate the oscillators. While a note is sustained, the envelope value holds steady, at +10; when the note is released, this value drops gradually to 0. Since the envelope value of +10 detunes oscillators 1 and 3, they are re-tuned with the FINE parameter, such that the note is on pitch while sustained. Upon release, however, the pitch drops in differing amounts for each oscillator due to the different values of DEPTH for ENV 2 (and not at all for OSC 2), thus creating the chorusing effect.

The effect is stunning, but the entire patch is tuned too sharp. Correct this by subtracting 4 from all three FINE settings. The chorusing also causes the pitch to drop noticeably flat; if this bothers you, you may want to retune things to better suit your ear (I like it). It is also easy to adjust the "delay time" before the chorus comes in after a note's release; this is controlled with the T4 parameter of ENV 2.

ESQ-1 Patch: BRYTPN

by Glen Gafter, Kent, OH

This is an electric piano that is good in the high register. It needs to be played through a reverb or echo.

The Hack: Here is a refreshingly different electric piano. (Reverb does help it considerably. On an SQ-80, try setting T4 of ENV 4 to 11R for this.) I wanted more velocity control over the brightness of the sound, so I went to the filter page and decreased the FREQuency to 35, then set VEL as a modulator with a DEPTH of +35. Similarly, I altered DCA 2 so that the tine sound of OSC 2 had more direct velocity control; try lowering LEVEL to 19, and using VEL as a modulator with DEPTH=+37. Finally, I like a tine sound that is tuned to a high fifth, so I changed to SEMI value of this oscillator to 07, with FINE=03. LFO adds a touch of vibrato to the sound (or a lot, with the mod wheel). I wanted a bit more vibrato coming in a bit later, so I changed DELAY to 02 and L2 to 19. In the end, the character and basic sound of Glen's patch is retained, with much more room for expression.

ESQ-1 Patch: BASS1.I

by A.R.T. Gven, Paris, France

This is a bass sound that I often use.

The Hack: BASS1.I is a big, round sound that's a nice copy of an electric bass guitar - something that's a bit hard to come by in this day of synth-bass patches. Envelope 1 adds a slight detuning to the attack of notes, and ENV 2 creates a realistic changing timbre by controlling the level of DCA 3.

I wanted a bit of vibrato control, and the mod wheel was free, so I set up LFO 1 with FREQ=24; RESET=OFF; HUMAN=ON; WAV=TRI; L1, DELAY, and L2=00, and MOD=WHEEL. (MOD=PRESS might better suit SQ-80 users.) Then I applied LFO 1 as a modulator, with DEPTH=+04, to all three oscillators.

SQ-80 Patch: HPSCD7.

by Kirk Slinkard, Lakewood, CO

HPSCD7. is the closest sound I could get to Lurch's harpsichord. It is layered with HPSCD4., which has identical parameters except for the following: for the oscillators, lower all OCTave settings to -1, set all FINE values to 0, and turn all MODs to OFF; lower the FILTER KEYBD setting to 18; on the ENV 2 page, set L2 to -28 and T3 to 56; on the ENV 4 page, set T4 to 10; turn the LAYER off. The result is one of the less bright voices used on harpsichords, and it intentionally has no expression.

This started as my HPSCD1. program; to get that patch from HPSCD7., lower all three oscillator OCTaves to -1, adjust all FINE values to 0, and turn off the layer.

The Hack: This is pretty much the closest electronic imitation of a real harpsichord that I've heard. With the layer off, HPSCD7. sounds like just the 4' register being used, and is nice and delicate. With the layer on, both 4' and 8' registers are heard, and the sound is much bigger.

By setting FINE of OSC 3 to 0, the patch sounds less electronic and more like strings vibrating. I also turned the filter resonance up to 05 for a slightly thinner sound. Note the excellent release "tick"; as a harpsichord key is released, the plectrum falls back into place underneath the string, briefly striking the string once again on the way down, but then quickly muting it. Kirk emulated this by controlling the filter with ENV 2, which has a release time of zero. Envelope 4, though, has a release of 14. So, when a key is released, the filter closes down instantly yet the note is still heard for a brief moment. Very nice!

*Bio: Sam Mims is a studio session player in Los Angeles, and a member of the band **THE NEWKS**. He 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: LIGHT1

BY: GLENN JAVAHERI

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	11	27	SAW	ENV2	+4	LFO1	+3
OSC 2	0	0	4	SAW	OFF	-	OFF	-
OSC 3	-1	11	31	FORMT1	LFO1	+4	ENV2	+2

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	45	ON	ENV1	+55	LFO2	-3
DCA 2	63	ON	ENV1	+1	LFO2	+10
DCA 3	63	ON	ENV1	-5	LFO2	+3

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	16	2	12	ENV3	+63	ENV2	+46

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	50	8	OFF	-

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	21	OFF	ON	TRI	0	2	17	WHEEL
LFO 2	63	OFF	ON	NOISE	0	18	29	VEL
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-35	+32	+19	18	16	8	11	38	45	0
ENV 2	+10	+10	+10	0	40	7	10	10	11	9
ENV 3	+63	+46	+48	6	19	2	54	43	44	3
ENV 4	+63	+51	0	20	0	13	56	26	58	16

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

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

ESQ-1 PROG:BRYTPN

BY: GLEN GAFTER

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	EL PNO	OFF	-	LFO1	+1
OSC 2	+3	0	0	OCTAVE	OFF	-	LFO1	+1
OSC 3	0	0	0	E PNO2	LFO1	+1	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	55	ON	OFF	-	OFF	-
DCA 2	50	ON	OFF	-	OFF	-
DCA 3	36	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	56	0	0	ENV3	+43	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO3	+42

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	20	OFF	ON	TRI	1	63	9	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	20	OFF	OFF	TRI	17	1	14	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	+60	+23	+18	8	0	0	38	37	20	20
ENV 4	+63	+42	+36	30	0	0	36	40	19	40

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

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

ESQ-1 PROG:BASS1.I

BY: A.R.T. GVEN

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	SINE	OFF	-	OFF	-
OSC 2	+1	0	2	SAW	OFF	-	ENV1	-2
OSC 3	0	7	4	SQR2	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	25	ON	VEL	+63	VEL	+13
DCA 2	63	ON	VEL	+13	OFF	-
DCA 3	0	ON	VEL	+14	ENV2	+63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	0	17	27	OFF	-	ENV4	+10

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO3	+23

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	-	-	-	-	-	-	-	-
LFO 2	-	-	-	-	-	-	-	-
LFO 3	6	OFF	ON	TRI	0	2	8	KYBD

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	+16	0	0	30	0	9	19	3	20	9
ENV 2	+63	+50	+45	0	50	0	20	0	0	9
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+63	+15	0	20	0	0	54	20	32

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	4	OFF	OFF	OFF	OFF

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

SQ-80 PROG:HPSCD7.

BY: KIRK SLINKARD

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	1	CLAV	OFF	-	OFF	-
OSC 2	0	0	1	GRIT3	WHEEL	+1	OFF	-
OSC 3	0	0	1	STRING	WHEEL	-1	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	53	ON	OFF	-	OFF	-
DCA 2	29	ON	KYBD	+63	OFF	-
DCA 3	52	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	99	0	22	ENV2	+63	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	45	8	KYBD2	+63

	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	-	-	-	-	-	-	-	-	-	-
ENV 2	0	-18	-63	0L	0	0	11	54	0	37
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	+63	+51	+11	0L	0	0	31	54	14	19

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

SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY
OFF	-	ON	HPSCD4.	OFF	-	-

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.

Hacker Announcement

Readers might notice a different feel to the Interface this month. We're trying to take some of the strain off Ensoniq by having our own bevy of Hacker writers field some of the questions. Clark Salisbury (CS), in particular, will be handling many of the technical issues that come up here. Other familiar names will also make occasional appearances as the need arises. Ensoniq will confirm their responses for technical accuracy and continue to handle the toughies.

We'd also like to mention that while the great majority of letters that we get serve to make the Interface a very useful and interesting feature, lately some letters have lacked, shall we say, a minimum quotient of professionalism. (You know which ones.) Let's try to keep the vitriol level down. Ensoniq ships thousands of instruments. A fair number of the instruments with trouble usually show up here. It doesn't benefit any of us to get a distorted view of reality because of this. Three letters with the same bug does not necessarily indicate a plague. An unreturned phone call does not constitute a conspiracy.

Ensoniq comment - *We very much appreciate Jane and Eric's help in getting this new system organized, and a very big thanks to Clark Salisbury for his efforts on this month's letters. We still receive and work with Clark on a response to every letter in the Interface, so if you don't see a direct comment from us it's simply because we have already discussed a solution with Clark and agree completely with the response you see.*

We'd also like to comment again that issues that relate directly to a problem that you have with any piece of Ensoniq gear that demands immediate attention should be made to us directly by calling our Customer Service department (215-647-3930) - that's what they're here for. A letter to the Hacker will take a couple months to show up in print - which is not the most direct solution to a problem. We see the letters as a forum for discussion, sharing ideas and tips and tricks about the products and suggestions for future updates/new products.

Dear Hackers:

I don't want to sound like a stick-in-the-mud, but Jim Grote's article, "Formant Shifting," in the January Hacker, contains some inaccuracies, and describes essentially the same technique I covered in my July, 1989 article, "Multisamples on the **ESQ-1** and **SQ-80**." Jim's method accomplishes the same thing, only it can end up with tuning problems.

Basically, we are not dealing with transwaves, as Jim suggests. Each ESQ and SQ-80 waveform is not a collection of many similar waves with varying harmonic content (like the transwaves on the VFX); they are merely multisampled and stored in the keyboard's wavetable. So we're dealing with waves that are similar to, say, a piano sound for the Mirage, with many notes sampled across the keyboard range. When the tuning of the wave is altered, such as with the OCT or SEMI settings, the multisample split points move as well, so that the PIANO waveform always sounds like a piano, no matter where you place middle C on the keyboard.

By modulating the waveforms a substantial amount, however, you can move beyond the multisample points, and play the waveform where it was not intended to be played. (You're not really shifting through different formants, you're just stretching the sample beyond where it normally plays.) This is the reason the modulated waveforms sound different, and this was the basis of my article. Aside from this, the problem with Jim's method is that he uses envelopes to do the modulating (ENV 1 in his example). As long as you hold a note down, the envelope modulates at a constant level of -19 (in the example), lowering the pitch of the oscillators. But when the note is released, the envelope goes into the Release segment, and its value then begins to change from -19 to 00. With the release time set to 63, this takes a long time to happen, and works all right for patches where the release of ENV 4 is fairly short. But for a patch with a long overall release time in ENV 4, you will be ale to hear the released note going out of tune.

The solution is to modulate with a squareave LFO instead, with the frequency set to 00 (my article outlines the specifics). This way, the pitch is always modulated at a constant value.

As far as trying this technique on the **VFX**, that's exactly what my TROMBONE patch (January, 1990 issue) does. But with only one LFO available instead of three, I did have to use an envelope to do the modulating; otherwise, I would have been left with no vibrato.

Sincerely,
Sam S. Mims
Syntaur Productions
N Hollywood, CA

[CS - Point well taken, Sam. On the VFX and VFX-SD the problem of detuning during the release portions of sounds with longer release times can be avoided by setting the pitch envelope to "FINISH" mode, setting pitch envelope levels 1 and 2 to the same value (so that there is no pitch shifting as the envelope moves from level 1 to level 2), and using a setting of +99 for time 1. In this way the pitch envelope should be held at a constant level regardless of whether or not you are continuing to hold down the keys on the keyboard, for a time of +99 - which corresponds to the longest release time available. Make sure, though, that you are using the same values for keyboard tracking on your pitch and amp envelopes - values other than +00 will cause envelope times to expand and contract as you move up and down the keyboard.

Also, you might want to check out what Nick Longo had to say on the same subject in last month's Interface (if you haven't already).]

Dear Hacker,

One quick question. A friend of mine recently purchased a **VFX-SD**. When using it, I noticed the improved keyboard. Is it possible to have a new VFX style keyboard installed in a **SQ-80**? If so, at what cost? I think this kind of upgrade would please many SQ-80 owners. I know my downstairs neighbors who can't hear my amp, but can hear my keys would be very pleased! This modification would also make the SQ-80 perfect for use with a VFX RACK!

Thank You.
Edgar C. Lecuyer
President, ECL Software
Wrentham, MA

[CS - It is possible. The cost would be in the range of, say, $327,158.64. Perhaps your downstairs neighbor would chip in. Seriously, the type of retrofit you outline would be prohibitively expensive.]

[Ensoniq's response - While we have refined the keyboard action, it is not possible to retrofit older units, as it requires changes to both hardware and software.]

Dear Hacker,

Let me preface this letter by saying that it is with much anticipation that I look forward to each month's issue. Your publication was indeed a help to me in those first few weeks with my **EPS** and continues to be a valuable source of information. I wish you continued success and would submit the following to you....

First, and you may want to print this in the Interface, I am wondering if anyone else has encountered this glitch in the EPS 2.40 OS while quantizing tracks....

Say, for example you laid down a drum beat with bass on 1 and 3 and snare on 2 and 4. When quantized, the second snare beat doesn't fall on 4 but rather at the precise moment that the sequencer stops. The problem usually doesn't show up in preview so if you

keep the track, the glitch is recorded in the sequence. Sometimes putting the sequence into song track solves the problem. The problem persists even when played back after rebooting with a 2.35 OS. Although re-recording the track with 2.35 OS does rectify the problem, you then run into the program change problems inherent to the 2.35 OS. I've tried other EPS's and other copies of the 2.4 OS and still the problem persists. Ensoniq has been made aware of the problem and has stated that there is a new OS coming out ...let's keep a good thought.

Daryl Jeffords
Lake George, NY

[CS - There is no known quantizing bug, and my attempts to duplicate your problem have been unsuccessful. Perhaps you could provide a bit more information - let me know exactly what buttons you are pressing, in what order, how many instruments you are using, any other MIDI equipment you may have connected, and so forth. Or you may wish to contact Ensoniq customer service at 215-647-3930.]

[Ensoniq's response - Clark is correct, please contact us directly to investigate this further. A new O.S. will be announced in the Hacker as soon as it is ready. Please allow us sufficient time to test it thoroughly.]

Dear Hacker,

I recently purchased SOUNDLAB for the Amiga and **Mirage**, and received version 1.0. I believe the current revision is 1.2, but BLANK SOFTWARE has discontinued supporting the product as of January 15, 1990. Can anyone help with providing the update to me? Has anyone successfully installed this on a hard disk on with WORKBENCH 1.3?

P.S. "The Other Guys" said they are willing to adapt their SYNTHIA-PRO sample-making software to the Mirage if someone would provide a keyboard or rackmount for 3-4 days. Anyone want to do this?

Dave Williams
Lancaster, Pa.

[CS - I've tried contacting Blank software regarding your problem, but so far have not received a return call from them. In the past, Blank has proved to be most helpful in resolving difficulties, so don't give up hope. When I hear from them, I'll pass along their recommendations in these pages.]

[Ensoniq's response - we do know that Blank Software sold the rights to Alchemy to Passport Designs. We don't know the status of Sound Lab but will try to find out for you.]

[TH - ditto.]

Dear Hacker,

I have had an **EPS** for over a year now. I would like to communicate that you are one of the publications which I am actually eager to get every month. You are doing a great job, but if only you had a BBS or a Compuserve forum, it would make things 10x better and faster. I just got my EPS upgrade with the Maartists 4X/SCSi expander and I have some questions regarding SCSI on the EPS:

1. I have a Rodime (Apple 20MB Mac SE HD) in use now with the EPS and it works okay. However using a QUANTUM P8OS drive precludes me from booting from the HD. I must insert a diskette with the OS and then issue the "Change Storage Device" command. Now, if I am not mistaken, I remember reading an article from Alan K. Smith regarding EPS DOS/SCSI MISC RAMBLINGS where he states that he likes using a Quantum drive because of its speed. How does he, or anyone else manage to use a Quantum HD with the EPS? Are there any known problems? If not, what could be my problem? Perhaps Mr. Smith would like to take on this question...Both of these HDs work with my Mac.

2. I would like to know the pin-out layout for the EPS SCSI connector so that I can make a cable between the EPS and my Mac. Is such a thing available to the public?

3. Why is it that a person willing to develop some useful software for the EPS cannot get enough technical support from Ensoniq to answer these types of questions? Why doesn't Ensoniq have an electronic BBS or C-serve forum where some interaction between developers from both sides can occur? There is a company called ACIUS which publishes a DB for the Mac called 4th Dimension. They should be the example for any software company willing to provide good customer and technical support. Not only they provide with on-line support on Compuserve, but they provide with monthly mailings and frequent updates to its developers. Why doesn't Ensoniq do that? It does not take that much to set up a BBS.

4. Why is it that Ensoniq does not release enough specs to allow someone to develop more specialized software that perhaps could allow a user to plug an EPS disk into a Mac (or any other PC) and read its samplewaves directly into his/her favorite sample editor?

5. Look what happened to Apple Computer and its closed architecture...and what's happening now to most of the minicomputer makers with closed architecture? Why not make the EPS the first totally OPEN ARCHITECTURE sampler workstation? What does it take? Releasing a few specs and providing a little more support. After a little while, the EPS will be the defacto standard because of the HUGE third party support for it .

6. Am I the only one with these types of concerns? I hope I am not asking for too much.

Miguel Estrada
Nashua, New Hampshire

[CS - 1) The Quantum drive you refer to is not on Ensoniq's list of hard drives approved for use with the EPS. However, the Alan Smith who wrote the article you mentioned (TH #45) also happens to be an Ensoniq Project Engineer. We'll see what Ensoniq has to say about this one...

2) The pin-out for the EPS SCSI has never been published, to the best of my knowledge. The pin-out, however, is 100% compatible with Apple Computer SCSI cables, of which I would assume you have at least one (for use with your hard drives). Using a volt-ohm meter to check for continuity between the pins at either end should give you the information you're looking for.

3) This question, and many permutations of it, seems to crop up time and time again. I believe the difficulty stems from a misunderstanding of the nature of a relatively small company (especially when compared with companies like GM, Sony, Sears, etc.) like Ensoniq.

Misconception #1: Ensoniq has technically skilled employees with time on their hands. If you are a third party developer and you need the answer to some technical question or other, it would seem that it might not be that big a deal to put an engineer on the phone for ten minutes to give you a hand. But go multiply that ten minutes by, say, 12 calls a day (probably a conservative estimate of the number of daily calls that Ensoniq might receive if they were to open up this type of communication). That's 25% of an 8 hour day that some highly trained engineer would be spending answering questions instead of designing new stuff and doing testing and revision on current stuff (of course, we all know that these guys work 18 hour days anyway, so the percentage is actually somewhat smaller).

Misconception #2: Ensoniq keeps all of their technical specifications for their products in a centralized, organized, carefully typed volume somewhere. "I don't need to talk to an engineer, I just need to see the specs." What specs? A company like Ensoniq does not keep specifications for its products in a format that is easily digestible by the casual reader, no matter how technically skilled. Why not? Refer to misconception #1.

Misconception #3: Releasing technical information about products to developers can only facilitate the exchange of new ideas and engender a climate of goodwill between Ensoniq and its supporters. Sadly, the opposite is the case more often than not. Releasing technical data that is not formatted for public consumption often engenders more questions than it answers. I am reminded of the time I was visiting an acquaintance who was extremely angry with one of the major keyboard manufacturers because they wouldn't supply him with the information he needed to create a patch librarian for one of their new products. I agreed to call the manufacturer on his behalf. In talking to them I discovered that he had already been sent all the data they had on initiating sysex dumps, addressing specific parameters via sysex and so on. What he now wanted them to do was tell him how to write the program in Basic.

Granted, not all people who claim to be developers are boneheads. Why, some of my best friends are developers. But how is a company like Ensoniq going to be able to separate the ones from the zeros? And if they could, who's going to be in charge of explaining it to the zeros?

Misconception #4: Ensoniq owes it to their customers to provide them with technical information on products that have been bought and paid for. When someone lays out cold, hard cash for a product, they have the legal and moral right to expect that that product will perform as advertised. They have the legal and moral right to expect that that product will have a certain physical longevity - if it breaks down two weeks after being taken out of its box, it will be repaired or replaced, free of charge. They have a moral right to expect that the manufacturer will do everything within reason to help them learn what the need to get the most out of that product. In my humble opinion, however, the customer does not have the right to know technical details about a product's design.

I can understand the frustration felt by many developers when it comes to the difficulty involved in finding the answers to technical questions about most hi-tech products. Those companies that elect to provide a high degree of technical support for developers are to be commended for their magnanimity and courage. To disparage those who do not, though, is unfair.

By the way - last time I checked, (which was quite a while ago, I'm afraid), a number of Ensoniq employees were members of PAN (the Performing Arts Network) and/or Compuserve - how about sending up a flag there and seeing if anyone responds?]

[Ensoniq's response - #1: From your letter we have to assume that you are able to load and save files to the drive, and your problem is being able to boot up from the drive. Under that scenario there are two possible problems to check. If the ID# for your Quantum drive is set to 0 it will not work, this is a bug in the software and will be addressed in the next upgrade. Just set the ID to any number other than 0 (except #3 which must be the EPS!) and it will be fine.

If not, the problem could be in the SCSI connector from Maartists. On our SCSI board we cut the trace of the system reset that goes out the SCSI port, so only the SCSI chip receives the system reset on startup. If this is not the case on the Maartists device it could cause the problem you are experiencing. You'll have to contact Maartists directly about that.

Alan does successfully use the Quantum drive with our SCSI connector so it certainly should work for you. Please contact us directly if you need more help.

#2: One point to add to Clark's response - neither the Mac nor the EPS have terminations on their SCSI ports so it is necessary to have a hard drive connected to your setup to work properly. A MAC SE or II series with internal Hard Drive should have the necessary termination.

#3: We would love to be in a position to be able to further support third-party efforts, which we do work hard to encourage. Perhaps in the future we can expand our efforts, but it's simply not possible at this time. It's very important to note, however, that the products we make are not necessarily designed nor marketed as "open-architecture" devices or development tools for computer programmers. They are defined as musical instruments and as such are not required to have that type of support.]

Gentlemen:

You have mentioned that the number of **ESQ**-1 patches being submitted is falling off. Perhaps a way to increase the submissions as well as provide an even greater service than presently would be to run a "request patch" column. This could function in two ways: first, people could inquire about a particular patch. Information could be made available on where to purchase it commercially as well as readers submitting their own versions of the patch. For example, I have a commercial bagpipe patch which I would recommend with no reservations to anyone. At one point I was trying to find a mandolin patch and found it in the Hacker. Briefly, what I am suggesting, is that subscribers write in for a desired patch and the editors et al supply a commercial source and review plus opening it up the readers.

Second, you could possibly run a patch contest. In order to meaningfully judge such a scheme it seems it would have to be focused. Again, pick a type of patch, for example, saxophone, and have readers submit their patches.

In any event, keep up the good work.

Goodwill,
Luke O'Malley
Ho-Ho-Kus, NJ

[TH - The "request patch" column sounds like an excellent idea. Readers are welcome to start sending 'em in. (Please note that they're intended for the "Request Patch" column.)]

Dear TH,

Forum Par Excellence - Best wishes to my favorite!

Some time ago I called you folks regarding sequences for the **ESQ1**. I have found it very helpful to have someone play and record a song in the form of a sequence so that I can play along with in order to improve my technique.

The problem is that there are very few, if any, sequences available unless I have

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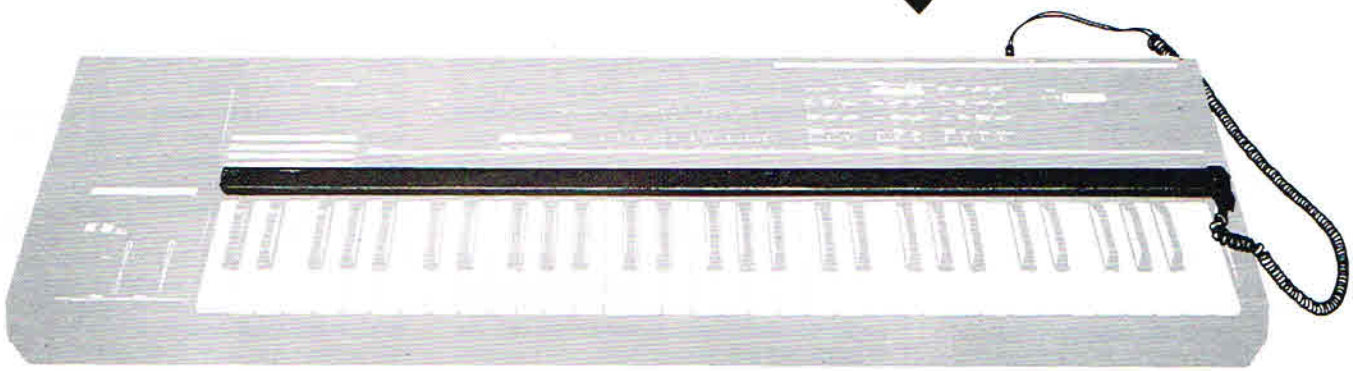

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someone come in and record them on my own unit.

The few on the market seem to be limited to a specific format. Even if I have an outboard or MIDI sequencer it is unlikely I will find a common format.

I have a Mirage rackmount so I can put them on Mirage disk and dump to the ESQ but the people who sell them seem to be always in some other format and want to charge me extra to put them on Mirage disk. That makes it expensive. The ESQ is remarkable in having the capability to record a tune and then allow it to be played back and also play along with it. I think that if more people were aware of this there would be a greater interest in keyboards.

There are several sequences on the market which one can save to disk or tape but, like computers, they all speak a different language and can't talk to each other. I, for one, would be very interested in obtaining some sequences of the kind of stuff they play at piano bars which I could load in my machine and play with.

There seems to be help on the horizon in Ametecs Pocket sequencer which could be filled and then exchanged by mail. If there is anyone out there who would be interested in putting some sequences on Mirage disk or tape for ESQ please contact me at the following address. At least we can exchange ideas.

Roy Fox
PO Box 2355
Kailua Kona, Hawaii 96745

[CS - Have you looked into the sequences from Danlar Music (PO Box 973, Tualatin, OR 97062), Roy? They have a large library available specifically for the ESQ (as well as for the SQ-80 and a number of other formats) - available on Mirage disk, computer disk, or cassette tape. User groups might also be of some help - I'm sure your local Ensoniq dealer would know if there's one in your area.]

Dear Hackers,

I have a question or two for all fellow Ensoniq owners and the great creators themselves, regarding the **EPS**.

1. Is it possible to apply negative values to KBD Time Scaling? The lowest value 0 has a + sign in front of it suggesting that we should also be able to have - sign there. The reason for this question is simple. When taking a sample of a flute or pipe organ at, e.g., C4 the "chiff" sounds very stretched on C2 and takes quite a while to finish. Of course I could duplicate this sample and set sample start to 5% or so, but that doesn't really solve the problem. You see, I try to simulate a sound that has reverb "built in" for ambiance. The only way to get close to that effect is to loop a portion of the decaying reverb, scale it from 1:1,50, smooth it (and hope you haven't created a panting aardvark in the process) then apply a decaying envelop with a long second release stage.

The problem that now arises is that the whole thing sounds quite reasonable on the keyboard except for the lowest octave. Instead of reverb you get a sort of sigh or yawn sound. Using the (positive) KBD Time Scaling only makes matters worse. Any suggestions? Can it be added to the O.S.?

2. Talking about scaling (command LFO page) - can Ensoniq publish a list or table setting Scale Start and Scale End against dB values with a graphic display of the actual event that takes place? Values range from 0.00 to 99.9 but when I start to 1 my speaker already start croaking when scale end = 3.

How can I get a decaying sound like a piano sample straight for a perfect loop?

3. Here is one I asked Ensoniq before, but got an unsatisfactory reply. Once in a while you get a dud in a box of 10. You have 6 great sounds loaded and a seventh killer sound under construction which needs to be saved, but darn it, you must first format a disk because the others are full. You insert your dud. Of course at this time you don't know it yet....You press YES to format. The disk begins spinning; the display reads *** FORMATTING DISK *** and shows that until the cows come home. What went wrong? The disk is not being formatted at all but the EPS seems totally locked up. You can't get out of all the formatting routines except by switching off. Goodbye, killer sound! Anyone with an answer?

4. Why does the EPS issue a DISK DATA CORRUPTED message during formatting? As far as I know there is no data on the disk at this stage except an awful lot of zeros.

5. When sampling at 52 kHz using a near-perfect SAWTOOTH or SQUARE WAVE at the input I still get aliasing on the upper octaves forcing me to take more than 1 sample. The input is only 1 kHz. Why is this?

6. Can multiple loops be programed in the OS like in the Akai S100?

7. Is there a possibility to add a routine that performs waveform analysis much like SoundProcess? In order to get some of those clean SQ-80 like sounds one needs at least 40 harmonics.

Anyone wishing to enlighten me can reach me at the address below. I live in a real Ensoniq dessert and #5 really needs input! So all you Hackers out there drop me a line. Please.

William Pont
P.O. Box 68950
Bryanton, 2021
Rep. of South Africa

[CS - 1) I'm not quite sure I understand your question, William, but I'll give it a go anyway.

Applying a negative keyboard amount to

KBD Time Scaling, if it were available, would allow you to have shorter envelopes as you move down the keyboard and longer ones as you moved up. The EPS OS does not allow you to do this, and I wouldn't hold my breath waiting for this feature to be added. In the meantime, you might try a couple of things.

Since each wavesample in the EPS can have its own envelope, and you can have up to 127 wavesamples for each layer in an EPS instrument, you should be able to copy your source wavesample enough times (a copy takes up very little memory, as you know) to have a separate wavesample on each key of the keyboard. This would allow you to adjust the envelope separately for each key, if you can stand that much tweaking (brush up on the copy envelopes function if you're not already familiar with it). In actual practice, you probably shouldn't need a separate envelope for each key - perhaps just for problem areas, such as the low octave.

This answer, of course, assumes that your problems are strictly related to envelope times. If you are having trouble with attacks of notes being too long for samples transposed down the keyboard, you might try using the keyboard as a modulator to control sample start time. Select the wavesample in question, press the 'Wave' button, scroll to "MOD=" (or type 87 to direct dial), set the value to "START" and set "SOURCE=" to 'KBD", scroll to the "MOD AMT=XX RANGE=XX K" page, and rock and roll! Both positive and negative values are available for this type of keyboard modulation.

Piano is, in my opinion, one of the more difficult samples to get good loops on. Much of this has already been covered in TH #47, May '89, so here's just a brief summary:

Volume smoothing (Command-Amp) is the process generally recommended for removing the natural envelope (or a portion thereof) from a sample, although scaling may also be of some help. Once a sound has been "volume smoothed" it should prove easier to loop. In some cases, however, changes in a sound's harmonic content over time can also make looping difficult. Piano presents just such a problem. A good bet might be to use a combination of volume smoothing along with one of the cross-fade algorithms. Or just put a single cycle loop at the end of a long sample where it won't be too obvious.

3) The disk formatting problem you describe is most likely a hardware problem - best thing would be to get your unit in to an authorized service center.

4) Actually, there is information contained in formatted, blank disks - primarily the disk directory. It's the directory that allows the EPS (or any device with disk-based storage) to locate specific files (instruments, sequences, etc.) to be loaded. During formatting, the EPS creates a directory which it writes to the blank disk, and attempts to verify its integrity. If it cannot verify that the disk has been properly formatted it will display the DISK DATA CORRUPTED message.

5) The pitch shifting algorithm in the EPS provides for adding or deleting samples to the source wavedata at strategic locations - adding samples causes the source wave to become longer, thus taking longer to play back, thus effecting a downward shift in pitch. Conversely, deleting samples effects an upward shift. To move the pitch up by one octave requires that half the samples be removed from the source data. Two octaves requires removal of 3/4 of the samples, and so on.

Now it may seem that this would still leave plenty of samples to accurately represent a 1 kHz tone - and it would be if the source data were a simple sine wave with no overtones present. Sawtooth and square waves (and any waves other than perfect sine waves, which are pretty hard to come by at that) will contain harmonics that may be many multiples of the frequency of the fundamental (1 kHz) pitch. It is probably these upper harmonics that are causing your aliasing problems.

6) Anything is within the realm of possibility, I suppose. Ensoniq has made it clear, however, that they consider the EPS a finished product and do not have the resources available to continue adding features to existing products. This would leave it up to third party developers, who tend to make decisions based on the perceived marketability of any add-ons, versus their investment in development time and frustration tolerance level (see the letter from Miguel Estrada above).

7) See the response to Luke O'Malley's question above.]

Dear TH,

Arghhh! What is with these TRACKS NOT APPENDED messages when appending to copied sequences on my **EPS**? Appending the offending sequences to themselves and then truncating them back to the original size helps sometimes. Mostly though, the EPS somehow gets to where it takes five seconds to do the APPEND leaving the combined sequence a musical mess. Attempts to "fiddle" the sequence from that point results in several second command delays and an eventual ERROR REBOOT 144. Is there a problem of some sort related to pushing memory limits with the 4X cartridge and an OX8 expander connected?

Given the last Interface seemed a bit thin (with few Hacker letters) I thought I had better get with it. I had some pretty major concerns regarding that patch controller 370 business that Mr. Lewis Ross of Portland, OR wrote about in October, TH issue #52. Lately, I have been using SMPTE-Track because my EPS has been unpredictably wiping out sequences (because I have become addicted to the powerful graphic se-

quence editing) and I have encountered the same kinds of (very annoying) problems. Without TH I would have probably have never sorted the mess out.

So here are my current concerns:

1. My EPS (serial # 10564F) sequencer seems to progressively lose musical accuracy timewise as the sequencer and sample loads push memory limits! Can this be? Individual tracks seem dead on time when played alone. I have checked voice allocations everywhere but the sequences seem to gradually go off tempo as the machine memory demands get tight! Perhaps it is my imagination! Maybe the poor old 68000 processor is just too busy for the level of accuracy I expect. Can the Ensoniq help me out here? This is becoming quite a problem.

2. Regarding the patch business, controller #70 seems to have four settings (00=off, 40="0, 80=0", FF=""). The events show up in the MIDI stream whenever the patch select buttons on the EPS are pressed, held, or released. There are clearly two separate problems here. The main problem seems to be that the EPS fails to channelize the incoming controller #70 events by instrument and instead puts all instruments into the same patch setting for any one instrument. This little glitch makes life a considerable mess (here we are mapping patch changes onto different keyboard ranges). The other problem relates to the EPS (by restarting the sequence, by running the offending sequence again to the end of the sequence or by issuing the specific MIDI command). The problem is obviously not the EPS but rather one related to the external sequencer. The EPS sequencer sets the controllers correctly whenever the sequence is not "restarted". External sequencers, however, do not typically provide the facility to issue manufacturers specific controller commands whenever sequences are interrupted and not "restarted" - hence the problem.

3. There also seems to be a glitch with the sequencer that relates to sequences that are not correct somehow. This problem may relate to the comments from Mr. Gregg Lentz of Litchfield, MN in the March, TH issue #45. Offending sequences cause the TRACKS NOT APPENDED error message to appear after executing the APPEND command. The glitch, as it turns out, is that songs with such sequences chained together ultimately go berserk and play bits of various sequences at seemingly random times. The solution seems to involve appending the sequence to itself and then truncating the sequence to its original length then (viola) the problem then goes away - sometimes!

4. Recently, I reviewed the mass of some two hundred "public domain" diskettes that have been distributed for Ensoniq in Canada. Although there are some good samples in the lot, the bulk are (in my opinion) garbage (fortunately there is a series of M1 diskettes which are pretty well done). Surely there is a someone at Ensoniq who is interested and able to sort this junk out before they send it to the retailers! Most of this "stuff" is just plain useless and who wants samples of songs?

5. My complements to Ensoniq on the Signature Series sound sets. They are pretty amazing productions. The sampling quality strikes me as exceptional overall. While I have preferences, I am quite pleased with the sample overall with perhaps the exception of the FX GUITAR type sample. The players here (no offense meant) do not seem to understand the logistics of constructing samples for keyboard playing, hence, seem to be producing samples (that are typical of a particular playing style) with the playing "built in". That is unfortunate because there seems to be some good ideas there with very application. So where can I get some (good) samples of heavily chorded guitars on both the down and up strokes in major and minor chords for the three basic guitar chord patterns each (using the LOOP AND RELAESE mode with the WS release point set to catch the backstroke)?

What else? Oh yes, I find your publication invaluable. This column alone has helped me solve some major operational problems. To that end I hope my comments are of some value to other Hackers.

Yours Truly,
Stan Morasch
Calgary, Alberta

[CS - 1) Your guess that you may be pushing the EPS too hard may be correct. It is possible to ask the EPS to do too many things at once. This is known as the "Mozart Syndrome" - as you know, at one point in his career Mozart was told he should use less notes in his music, as the human ear could only hear so many notes before the onset of fatigue. From the information you've given me, my guess is not that the memory of the EPS is too full, but rather that your compositions are a bit dense for the EPS to effectively deal with. You may improve performance some by using sounds with as few layers as possible, by combining multiple samples that are playing in unison or doubling into a single sample, or by sending some tracks to an external instrument via MIDI.

2) The patch select problem is also a known bug, and will also be corrected (hopefully) in the next software revision. The problem seems to be that the EPS re-transmits patch select information that it receives at its MIDI in to its MIDI out. When you are using an external sequencer with the EPS, you can easily set up a MIDI loop of the patch select data, which will often cause the patch selects to latch up or otherwise misbehave. So the problem is not that the EPS is having trouble dealing with incoming patch select data - it's having trouble with the loop that is set up when you are trying to record outgoing patch select data on one track of your outboard sequencer while

playing back patch select data on other sequencer tracks. The best thing I can think to do (while waiting for the next software rev) is to try recording your EPS tracks without using the patch select buttons, and then manually inserting the patch select data into the sequence after all other recording has taken place. I know it's a pain in the neck, but most current sequencers support this type of controller editing, and the EPS should behave rationally when receiving patch change data on multiple channels.

Regarding the second part of your question, many sequencing programs now include some form of controller chasing. This means that if you begin playback of a sequence from somewhere other than the beginning, the sequencer will scan backwards through its data to locate any previous controller messages, and will then send those messages before playback actually begins. Check to make sure that this feature isn't implemented on your sequencer - if it's not, there's a good chance that you'll see it in some forthcoming upgrade.

3) The sequence append problem is a known bug in OS 2.4. Ensoniq is currently working to correct the problem, and hopes to have some sort of new EPS software release this spring. I had really good results duplicating this problem in my studio, but there may be a work-around. It seems that the difficulty may be in trying to append a sequence with, say, five tracks recorded to a sequence that may contain 5 tracks, but into which not all of the tracks have been recorded. Try this:

Before appending, make sure that each track in the target sequence has been in record mode at least once. It doesn't seem to matter if there is data actually recorded into the sequence or not - just that you have at least hit the record button and let the sequencer run for a few beats for each track. If you are having trouble remembering which tracks already have data recorded into them, make sure the sequencer is in either "ADD" or "LOOPED" mode before you put any tracks into record mode. This will guarantee that you won't lose any previously recorded material, as might be possible with the sequencer in "REPLACE" mode. I don't know if this will clear up your problem, but it seems to work for me.

4) I know what you mean about public domain. Sometimes it seems that you find yourself wading through gigabytes of data just to find that one good yak mating call sample. But that seems to be the nature of public domain - any and all samples are welcome, regardless of fidelity, usefulness, or religious significance. Also, I have learned that it is very difficult to predict exactly what a given user might find interesting in terms of source material - I know people who actually go nuts for samples from the latest "Guns and Butter" single. Besides, you ever try to organize this stuff? People who do that sort of thing usually wind up becoming president of a user group or something.

5) Looks like our very first contribution to the new, improved "Patch Request" feature (see Luke O'Malley's letter above). Nothing immediately springs to mind in terms of the samples you're looking for. Any of you readers or third party vendors got any input?]

Dear Hacker,

This is in response to some letters I've seen in Interface recently:

So you're angry because your **VFX-SD** keeps crashing? Remember, patience is a virtue. Besides, you just had to have it as soon as it came out, didn't you? Well, I did too. Let me share some information that might make you feel a little better.

First, some background. I've had a VFX-SD for three months after trading in my trusty ESQ-1. I work a nightly gig and and also work in a contemporary gospel group. I rely on sequencing for both.

The VFX-SD is a *wonderful* keyboard, but let's face it, at this point in its software development, it's still going to be a little bit touchy. Now, a lot of VFX-SD owners probably won't experience some of the problems I and other heavy sequencing users have run into. Most of all, the problems I have found are sequencer software related. That's good news, since that software is frequently being updated.

I have run into some major problems, even with OS 1.37, however I have also run into some solutions.

1. *Always* use a surge protector. With software this delicate, it is a must. Since I installed one, my problems have decreased 50%.

2. At this point in the software development copying sequences and then editing them can be a problem. It's a hassle, but I run into less problems when I start sequences from scratch. (OS 1.7 seems to have cleared this up.)

3. Keep at least 11 or 12k of sequencer memory free. Occasionally, sequences will change effect algorithms while playing from one sequence to another (for no apparent reason.)

4. As always, save everything to disk as soon as you do it.

And, most importantly,

5. When sequencing and quantizing, push the buttons slowly and firmly. Rushing through this can sometimes confuse the software and cause the system to crash.

I think it's important to realize that the VFX-SD offers so many sequencing, performance, and sound sculpting options, that early software problems are inevitable. Remember, the sequencer is software loaded and is constantly being revised and improved. Even with all the problems I've encountered, I still think that the VFX-SD is the *best workstation available*, and would consider nothing else.

So, come on, you VFX-SD owners, quit your crying! Let's get behind this thing.

P.S. Anyone with questions (or answers) can write anytime.

Eric Copeland
633 Montclair
Lexington, KY 40502

[CS - Thanks for the input, Eric. Always interested in tips and applications ideas. As for the problem with sequences switching effects during song mode - there is a parameter located on the "Seq Control" page ('SONG STEP EFFECT') which allows you to determine whether new effects will be loaded with each new song step, or whether the entire song will be played using one predetermined effect.]

[Ensoniq's response - Thank you for your kind words, we work continually to improve our products and have been helped innumerable times by user's feedback and comments.]

Dear TH:

I want to start out by saying thank you to the magazine and to Tom McCaffrey whose name and number I got from the Transoniq Network section.

I don't consider myself a hacker as much as, say, a butcher, but I manage to get it all together for the final product, anyhow. I have owned an **ESQ-1** for about two years and recently purchased a used **SQ-80**. Well, the ESQ-1 with 2.3 software and the SQ-80 with 1.7 weren't getting along as planned. Imagine trying to marry two keyboards and getting such results as "Fatal Error Detected - All Memory Erased!" Not a marriage made in heaven. Tom's help over the phone answered a lot of questions for me and my keyboards are no longer looking at divorce.

Prior to my ESQ-1, my expertise was performed on some great pieces from the stone age, such as a Hammond C-2 modified with two Leslie speakers, Fender Rhodes 77 suitcase and an ARP string ensemble. Purchasing my ESQ-1 was a real culture shock and a bold step for my first modern synthesizer. 200-page owners manuals can be very intimidating, but I hung in there and persevered. I bought my SQ-80 from a person who apparently couldn't get past the manual. The entire manual was "highlighted" in several nice colors, but the keyboard memory was virtually empty except for some commercial disk data.

Your magazine mentions all kinds equipment that I've never heard of before except for the Mirage, so I guess I have a lot of catching up to do. Tom also suggested I get the 3.5 update for my ESQ-1 - which I will when I get the particulars as to where and at what cost. Please keep us butchers in mind when writing your articles. How about a little history review for the new subscribers? I would like to know what is considered Ensoniq's best keyboard and what are its capabilities and how does it compare to the competition's.

TH really out-performs the rack-mount magazines I have tried to get information from.

Many, many thanks,
Mike Murphy (the "Butcher")
Palm Coast, FL

[CS - Thanks for the kind words, Mike. As you know, TH is a small independent company, and cannot afford to produce both a rack-mount version of the magazine and to continue to produce the elegant console version you now hold in your hands. By the way, the cost for the ESQ-1 3.5 update is pretty minimal, and you should be able to connect with it at any authorized Ensoniq repair center. Check it out - it's definitely worth it.

Regarding Ensoniq's "best" - I don't know. What's the "best" car or "best" computer in the world? To do what for how much?]

Dear TH,

Greetings and salutations! Your publication is just about the best accessory one could purchase for an Ensoniq device. It took me several months to figure this out and subscribe, but I did order back issues.

I've been an **EPS** owner for almost a year now and I am thoroughly satisfied with it. I use it onstage probably twenty times a month and then drag it home to write music. It gets bounced around the trailer, hauled in and out of the cold, basically subjected to a lot of abuse, and has performed flawlessly. Unlike others who have written to complain about problems, I'm tipping my hat to Ensoniq for a fine piece of gear and very good support from their staff. I've had some problems, but they have all been due to operator error (damn that operator!).

I plan on upgrading my 2X memory to 4X/SCSI and adding a hard disk. One thing I worry about is this memory expansion unit sticking out the back. Mine's been bumped only a couple of times, but this seems to be a weak spot in the architecture. Can this get seriously damaged? Also, my OEX cable has been knocked off just by brushing past it, but it still works. Won't that damage that also? Is there a better cable available, or a shorter one? I just want my hardware to last forever. I hope that's not asking too much.

Another thing real quick. Maybe I'm not fully grasping dynamic voice allocation and/or the amp envelopes, but it seems like I have to save the percussion envelope for my longer percussion sounds (cymbals, etc.) or else their tails will get cut off when played in rapid succession. What if I want to use another envelope? Damned operator?

I'm also curious, TH, if you're planning any articles comparing various brands of hard drives. That'd be fun. I'd like to see a chart, complete with prices, performance specs, lines, dots, dashes, arrows, and dancing girls. I guess I'm one of those sickos that likes to read about the top of the line

models so that I know what I'll be missing out on when I buy one that I can afford.

Oh, did I mention that I'm *not* a keyboardist? I diddle with it while sequencing, of course, (let's see, uh, C major, umm....) but I'm a drummist by trade. I'd love to see some percussion oriented columns on a regular bases.

Well, thanks again, Ensoniq, for a great toy; and TH for an invaluable resource, I've gotta hit the happy trail. Maybe I'll sample that door slamming on the way out...

Kevin Head
Columbia, MO

[CS - The question of the OEX cable problem has been addressed more than once in these pages. Ensoniq maintains that plugging and un-plugging the cable while the EPS is powered up is "not a real good idea," and they acknowledge the fact that the cable is pretty easy to accidently unplug. Big help. One possible solution would be to only use the OEX while the EPS is in "powered down" mode - that is, don't use the OEX and the EPS simultaneously. Another idea would be to be really careful when using the two together. Still another idea would be to throw the whole thing open to public debate. Write me, tell me how you deal with the problem - duct tape, crazy glue, silly putty, whatever. The best idea to come in might even win a prize. Maybe a disk chock full of favorite yak mating call samples, or something like that.

As far as your concerns about your memory expansion card sticking out the back of your EPS, Ensoniq says that they've had no reports of user problems due to this particular equipment configuration. I tend to think they're on the level - I've had my expander for quite some time, now, and I do tend to transport my EPS hither and yon now and again, and I've had absolutely no difficulty to date.

As far as the hard drive comparison goes, I think it's a great idea. So did MacUser and MacWorld magazines (among others). They both thought it was such a great idea that they've both run at least a couple of feature stories on hard disk comparisons within the past year or so. And theoretically, any Apple compatible (truly compatible, that is) hard drive will work with the EPS, so I recommend you check out back issues of both those magazines, and compare their recommendations with Ensoniq's listing of approved hard drives. You should be able to find what you need to know.]

[TH - You might want to check out Bill Lewis's review of the Eltekon family of drives in Issue #49.]

[Ensoniq's response - We suggest that you do handle the OEX-8 carefully but do find some of Clark's comment a bit "tongue-in-cheek." We agree that sharing some ideas and comments is a good thing to do and we look forward to hearing your ideas.]

Greetings fellow hackers,

To Ensoniq: First some praise. Your efforts to provide musicians with instruments with all the extras they want at a competitive price is appreciated and, indeed, our purchases are your rewards.

Now some (hopefully) constructive criticism. How about some better quality control? We all know you get what you pay for, and this is true for the parts you buy as well as the keyboards we purchase. Since I purchased a **Mirage** I've had the disk drive replaced twice and the circuit board and the display each replaced once. In spite of this I still bought an **SQ-80** because of the sequencer, the relatively inexpensive disk memory, the multi-timbral capabilities, the wonderful expressiveness provided by th Poly-key aftertouch, and most of all, the wealth of info and feedback provided by TH.

But, as soon as I took it out of the box it began freezing up or displaying "System Error #3." After having new chips installed the problem now only occurs when the unit has poor air flow and overheats, or if I turn it back on immediately after turning it off. Now the last character on each line of the display intermittently disappears. I have asked my local Authorized Service Center to order a new display now while it is still under warranty.

Recently when I have the SQ-80 play a track on the Mirage it sometimes comes out transposed down about 3/4 of a tone. Played from its own keyboard the Mirage is in tune but played from the SQ-80 track manually or by the sequencer it's out. I believe this is a problem in the Mirage because rebooting resolves it, but this is a real stress test in live performance. What can be done to prevent this?

So now I've heard the EPS and VFX in demo seminars and the sound quality blew me away. I immediately wanted one but my doubts about quality persist, based on my own past experience. And to TH: actions speak louder than words. Please renew my subscription.

David E. Zipse,
Cardiff, NJ

[Ensoniq's response re QC - Quality is a very important issue here and believe us when we say that we are striving to improve it on a daily basis. Most important is the fact that we are here for you whenever a problem might arise.]

[CS - Your problem with the Mirage/SQ-80 sounds like a pitch bend glitch to me. If the pitch wheel on your SQ-80 is not returning completely to zero after a bend, the problem you describe is likely to occur. Here's a couple things to check:

Can you get the Mirage back in tune by moving the pitch wheel on the SQ-80? If the Mirage snaps back to tune when the SQ-80 pitch wheel is zeroed (centered) then it's almost certain your problem is with pitch bend. Be sure the pitch wheel on the SQ-80 is centered when you first power up - if you're moving it, or holding it away from center on initial power up, you can have problems.

If fussing with the pitch wheel doesn't seem to clear up the problem, check any other MIDI gear that you may be using in connection with the Mirage and SQ-80 - some early sequencing programs will not reset pitch bends and other controllers back to zero when sequence playback is stopped - even if playback is stopped in the midst of a string of pitch bend commands!

If none of this helps get you back on the road to tuning nirvana, you might want to check with your local service center, or give Ensoniq customer service a call at 215-647-3930.]

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