TRANSONIQ HACKER

The Independent News Magazine for Ensoniq Users

EPS Sample Editing & Customization Guide

by Craig Anderton

A sound disk cannot always be designed to work in all musical applications. For example, a sound with a long attack time may not come in fast enough for an uptempo tune; and sounds with long release times will sound strange when pitch-bending. In order to get the most out of any sound disk, it's a good idea to tweak its sounds for your particular application.

The more familiar you are with editing sounds on the EPS, the greater your ability to shape a sound as desired, or even turn it into a whole new sound altogether. But there's a Catch-22 at work here: people often buy sound disks precisely because they don't want to spend too much time programming their machine. Fortunately, though, it's nowhere near as difficult to modify a sound as it is to sample one from scratch. In fact, a few strategic adjustments can cover most of your needs.

General Editing Procedure

An instrument contains one or more layers, each of which contains one or more wavesamples. You can edit individual wavesamples, layers, or the entire instrument; in most of the editing applications given below, it's simplest to make edits that affect the entire instrument. To do this:

1. Select the instrument to be edited; its yellow LED will light.

2. Press the orange Edit button.

3. Select the patch containing the wavesamples/layers to be edited (hold down the desired patch buttons, and while holding them down, press the instrument button).

4. Move the cursor under the instrument name. This insures that any editing changes affect all samples in all layers.

Note that this will edit only the layers and wavesamples in the selected patch. To edit all layers and wavesamples in all patches, temporarily set a patch to play all layers, and edit that patch. Here's how to set a patch to play all layers:

1. After completing step (4) above, press the Instrument button.

2. Scroll to the XX PATCH=-------- screen; there may be numbers instead of dashes. Write down the setting so you can return to it later.

3. Move the cursor under each dash, then press the up arrow button. Do this until all eight layers are enabled, as indicated by the display saying XX PATCH=12345678.

4. Press Edit and get ready to start tweaking. After you've finished editing, remember to change the assignment back to its initial setting.

Selecting What to Edit

After selecting the layers and wavesamples to be edited, press one of the Page buttons (0-9) to select the function to be edited (Env 1, Pitch, LFO, etc.). Once within the page, you can scroll through the different parameters available on that page with the right and left arrow buttons. After locating the desired parameter, it's time to change its value.

Changing Parameter Values

There are two ways to change parameter values: with the Data Entry slider or the Up/Down cursor buttons. It's usually best

In This Issue...

MIRAGE:

The First Multisample - Part III
Barry Carson 9

Review: Cybersoniq Volume 2
Dave Caruso 13

Review: Minotaur Disks 4 and 5
Michael Carnes 19

ESQ-1/SQ-80:

Secret Messages and Delay Effects
Sam Mims 6

Review: Voice Crystal Volume 3
Chris Barth 14

Review: Technosis Proselect Series
Chris Barth 14

Hackerpatch
Sam Mims & Contributors 22

EPS:

Sample Editing & Customization
Craig Anderton ..... Cover

The EPS - TX81Z Problem
Dick Lord 5

Approved Hard Disk Drives 7

Using the EPS Sequencer Live
Bill Lewis 11

Making EPS Pitch Table Libraries
Gary Morrison 16

Top Five Most Common Q's & A's
Ensoniq 20

GENERAL:

Random Notes 3
Hypersoniq 3
Current O.S. List 5
Tips From Headmaster *Roy Elkin* 20
Classifieds 24
The Interface 26

to use the Up/Down buttons, because if you're editing more than one layer or wavesample, each value will be increased or decreased (with the up and down cursor buttons respectively) relative to its pre-programmed setting. When editing with the data slider, the parameter being adjusted (this includes the same parameter in other samples or layers) immediately "forgets" its pre-programmed setting and assumes the value selected by the slider. Use this mode only if you know what you're doing.

The Most Common Sound Tweaks

Longer Decay: The amount of time a note decays after you release your fingers from the keys is often worth modifying. Longer decays give a reverb-like quality and work well with legato solo voices, but shorter decays are often necessary when playing with other instruments, or when using pitch bend.

To increase the release time, select Env 3, and scroll until you reach TIMES=XX XX XX XX XX, then edit the rightmost Time parameter. Higher values give longer decays.

Shorter Attack: In percussive sections, short attacks work best; in legato passages, longer attacks work well (especially for strings). To shorten the attack, select Env 3, scroll to TIMES=XX XX XX XX XX, then edit the leftmost time parameter. Lower values give shorter attacks.

Brighter Sounds: To brighten up a sound, select Filter and scroll until you reach CUTOFF F1=XX F2=XX. For most filter configurations, higher values of XX give a brighter sound. To brighten up just the peaks of a sound, scroll to ENV 2 AMT F1=XX F2=XX. Increasing the values gives a brighter sound.

Mellower Sounds: To make an instrument more muted, follow the same procedures described above but decrease instead of increase the values.

Transposition: Select Pitch and scroll to ROOT KEY=XX FINE=XX. Increase the root key suffix to lower pitch, and decrease the root key suffix to raise pitch.

Eliminate Pitch Modulation: Some people like vibrato, some don't; some like polyphonically-controlled pitch bend, and others hate it. To reduce vibrato, select Pitch and scroll to LFO AMOUNT=XX. The closer the value is to zero, the less the amount of LFO modulation.

Scrolling right from LFO Amount passes through other pitch modulation sources (Env 1 and Random), which can also be zeroed if they get in the way. To remove Poly-Key, keep scrolling to PITCH MOD=. Either set the value to zero, or the type to OFF.

Velocity: There are two ways to tie amplitude to velocity with the EPS. One option is to program soft and hard velocity curves for Env 3, the other is to use velocity to control the overall amplitude (Amp page). The latter is a simpler procedure, especially if you want to increase the response to velocity.

Select Amp and scroll to VOLUME MOD=XXXXX * XX. Select VEL, VEL 1, or VEL 2 for the type (depending on what kind of velocity curve you want) then set the value. Higher values increase the dynamic range (i.e. the soft parts get softer).

With lots of velocity response, you might want to turn off the soft envelope in Env 3 in case it's also controlling velocity. To do this, select Env 3 and scroll to SOFT VEL CURVE=ON. Press the down arrow cursor to turn the soft velocity curve to OFF.

Beyond Tweaking

One side benefit of editing disks is the familiarization you gain with the EPS. There is a lot of signal processing power hidden within the machine, and it can be used to very good advantage. In particular, don't forget about the Second Release function in the Amp and Filter envelopes. I generally don't add a lot of reverb to sound disk patches because although it sounds impressive when you play the instrument by itself, if you end up going through a "real" reverb the EPS reverb could very easily get in the way. If you know how to adjust the Second Release, you can dial in precisely the amount of reverb you want. Since this is explained in the manual, we won't go into it here.

When you discover a tweak that you like, save it to a different disk. Only write over the original sound disk sample if you're sure you want to live with the tweaked version. Personally, I try to keep my sound disks relatively "neutral," and just make a few tweaks here and there as needed when I load the sound. Often these changes are minor enough that it's not really worth saving them to disk.

Tweaking sound disks for your needs are worth the effort, and I hope the above tips will help get you started.

Bio: Craig Anderton is the editor- n-chief of Electronic Musician *magazine. He plays with the group* Transmitter, *produces/mixes albums, and has written several books and hundreds of articles on musical electronics.*

"Introducing a new 24 disk sound library for The Mirage . . . . . a step beyond what you've been used to hearing!"

The first thing that comes to mind when playing any of our MIRAGE samples is "Fidelity." Something you may NOT have been hearing a lot of from your MIRAGE lately. Our MIRAGE SOUND DISKS can change that! At SYNTHWARE we use a process called "Frequency Separation Sampling." It work's like this. The sound to be sampled is divided by harmonics, which are then individually sampled. These separate harmonics are then digitally merged back together, to create the final sound. The end result is simply astounding!! Give them a try and hear what you've been missing.

ENTIRE 24 DISK LIBRARY	199.95
*TRIAL PACK OF SIX DISKS	59.95
*TWO DISK DEMO PACK	19.95

Please add $2.50 for shipping

* *Specify what type of sounds you would like. Strings, Organs, MIDI Stacks, Hybrids, we have just about everything!*

SYNTHWARE
1126 Whitner Road
Reading, Pennsylvania 19605
(215) 921-3111

VISA · MasterCard

Front Panel

RND (♪♫♪)

The next issue may be a little frenzied - we'll be putting it together right when we're getting set to leave for the winter NAMM show. If you happen to be at NAMM, try to catch us and say "yo." We'll be hanging around the Press Room and the Ensoniq booth a lot of the time. Ensoniq's also pretty busy getting ready for NAMM. Rumor has it that there may be a new synth...

* * *

Our comment in last month's *Interface* about Dick Lord doing some consulting for Ensoniq turns out to be in error. That was the plan but it didn't actually work out. Anywho, this leaves Dick more free to continue sharing his discoveries with the rest of us. There should be some tidbit from him elsewhere in this very issue.

* * *

The *Advanced Applications Guide* for the EPS is done and in the mail to all who sent in their warranty cards. If you've sent in your card you should've actually already received your copy by the time you read this. We've seen a copy and our first impression is that, while it's much-needed material, it's still a little skimpier than most people will want. (But then, that's great if you happen to be in the User's Magazine business...)

* * *

Be famous instantly! Yes it's (still) that time again - our *Hackerpatch* file is getting skinny. Good time to send us your best.

* * *

Transoniq Hacker is typically on a 4-week, 4-week, 5-week schedule. You should receive the next issue (#44) in approximately 4 weeks.

* * *

TRANSONIQ-NET

HELP WITH QUESTIONS

ALL ENSONIQ GEAR - Ensoniq Customer Service. Business hours, East Coast Time. 215-647-3930.

MIRAGE 24-HOUR HOTLINE: M.U.G. 914-963-1768.

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

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

ESQ-1 AND SQ-80 QUESTIONS - Tom McCaffrey. ESQUPA. 215-750-0352, before 11 p.m. Eastern Time.

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

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 HARDWARE & FIRMWARE - Scott D. Willingham. Pacific Time (CA). Weekdays: 6-9 p.m., Weekends: 12-9 p.m. (213) 397-4612.

MIRAGE OPERATING SYSTEM - Mark Cecys. Eastern Time (NY). Days. (716) 773-4085.

MASOS - Pete Wacker. Whenever. (602) 937-1177.

HYPERSONIQ

NEW PRODUCT RELEASES

SOUND LOGIC of San Diego now has blank 80- and 160-voice EEPROM (RAM) cartridges for the ESQ-1, ESQ-M and SQ80. Prices are $42.95 and $79.95 respectively. One-year warranty and money back guarantee. Shipping and handling is FREE in the U.S. For product information or to order, please write: SOUND LOGIC, 1125 Eleventh St., Ramona, CA 92065. Or phone: 619-789-6558.

PS SYSTEMS releases three expansion products for the Ensoniq EPS. The *EPS-4X*, four times (one megaword) memory expander with future expansion capability to eight times (two megawords), retails for $899. The *EPS-2X*, two times (256k) words) memory expander retails for $299. The *EPS-SCSI*, SCSI expansion port retails for $149. The *EPS-4X* and *EPS-2X* expanders are also compatible for use with Ensoniq's SCSI expansion port. A trade-in rebate program is available for users who decide to upgrade from the 2X to the 4X. All products are user installable and come with a one-year warranty. Contact your local Ensoniq dealer, or for direct orders and dealer inquiries contact: PS Systems, 8933 Lombard Place, Suite 211, San Diego, CA 92122. 619-535-9688.

CHANGE OF ADDRESS

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

BACK ISSUES

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

SUBSCRIPTION INFORMATION

12 MONTHLY ISSUES

US: $23/year. All others: $30/year. (Please use International Money Order, payable in US funds.) Please make payable and mail to:

TRANSONIQ HACKER,
1402 SW UPLAND DR., PORTLAND, OR 97221.

SEND YOUR ENSONIQ EPS INTO OVERDRIVE™

INTRODUCING " OVERDRIVE" ™ A RACK MOUNTABLE HARD DRIVE STORAGE SYSTEM FOR THE EPS SAMPLER

FEATURES *" EXCLUSIVELY ELTEKON "*

- CHOOSE FROM 20 MEGABYTES TO 2.1 GIGABYTES OF STORAGE
- DRIVE ACCESS TIMES FROM 16.5 TO 63 MILLISECONDS
- INSTANT LOADING -AS FAST AS 6 SECONDS FOR AN ENTIRE FILE DUMP
- STORE ANYWHERE FORM 100 TO 5000 SAMPLES
- COMES WITH AN ASSORTMENT OF HOT NEW EPS SAMPLES
- WHISPER-QUIET COOLING FAN · RUGGED RACK MOUNT
- 6 FOOT EXTENSION CABLE · OPTIONAL 12 FOOT CABLE
- 12 MONTH WARRANTY

New from ELTEKON- a complete line of Hard Disk Drives for the ENSONIQ EPS sampler designed for maximum performance and reliability. The OVERDRIVE SERIES can satisfy low end price conscious buyers as well as power users. Flexibility is provided by an additional SCSI daisy-chain connector and cable, an external push-button SCSI device select is also provided which allows you to daisy chain up to seven drives. This could give you a maximum storage capability of 2.1 gigabytes.

All drives are "double shock mounted." This protects recorded data and make OVERDRIVE Hard Drives the most reliable sub system on the market. The unit comes with a rugged rack mount complete with a 6 foot cable. There is also an optional extension cable which is 12 feet. Our drive has been tested, evaluated and recommended by ENSONIQ Corp.

- DUAL SCSI CONNECTORS FOR DAISY CHAINING
- SCSI ADDRESS SELECT SWITCH
- RAIL MOUNTS TO SECURE YOUR CABLES TO THE DRIVE
- EASY ACCESS TERMINATOR REMOVAL FOR DAISY CHAINING

Specifications

Formatted Capacity	20 MEG	30 MEG	40 MEG	60 MEG
ACCESS SPEED	65 ms	28 ms	40 ms	40 ms
Formatted Capacity	80 MEG	90 MEG	150 MEG	300 MEG
ACCESS SPEED	28 ms	18 ms	16.5 ms	16.5 ms

OVERDRIVE IS A TRADEMARK OF ELTEKON TECHNOLOGIES, INC. 1989

DEALER INQUIRES WELCOME!

ELTEKON TECHNOLOGIES, INC.

37493 SCHOOLCRAFT RD
LIVONIA, MI. 48150
313 -462-3155

EPS AND ENSONIQ ARE TRADEMARKS OF ENSONIQ CORP.

The EPS - TX81Z Problem Explained

by Dick Lord

In the Interface section of Issue #42, Tom Jordan asked why his TX81Z goes to sleep when he tries to run it from the EPS. I also had this problem, so I went to work to find out what was happening. Here are the results of my investigation.

Whenever an instrument is selected on the EPS, a block of MIDI data is transmitted which includes a program change command and eight controller messages as follows:

```
Ex   00 40    Set pitch bend to center position
Bx   01 00    Set mod wheel to 0
     46 0     Momentary patch select = 0 (EPS unique?)
     02 00    Set breath controller to 0
--> 04 00     Set foot controller to 0
     07 7E    Set volume controller full on
     40 00    Release sustain pedal
     Dx 00    Set channel pressure to 0
```

These messages set all controllers to a known state in the external module when it is selected. (Unfortunately, this isn't the current state of the controllers in the EPS.)

It is the foot-controller message that makes the TX81Z go away. In the TX81 there is a parameter called "FC Volume" under EDIT FUNCTION. This controls the effect that the foot controller will have on volume. When it is 0, the foot controller has no effect, while when set to 99, both foot controller (04) and volume controller (07) have full effect on the TX81's output. Thus, when the FC Volume parameter is set to 99 and the EPS sends foot controller=0 (Bx 04 00) the output of TX81 is turned off. All the ROM factory presets of the TX81 have this parameter set to 99, so the only nice way out of this is to copy all the presets that you use into user memory and edit the FC volume parameter to zero for each one.

A less desirable solution is to set the pedal on the EPS to "PEDAL MOD MIDI=4" on the EDIT SYSTEM page and to kick the pedal each time the TX81 is selected. (If you don't touch the pedal, the TX81 thinks it's set to zero.) With this solution, you don't have a volume pedal for your other modules.

While the dual controller problem is mainly Yamaha's, it should be noted that the EPS controller reset message doesn't exactly make life easy for Ensoniq modules either. It would be much nicer if the message reflected the current values of the EPS controllers rather than resetting them all. If you decide to fade out your volume pedal while playing the EPS and then fade in after selecting the ESQ-M as a MIDI instrument, you will have to kick the pedal down and then back to set the ESQ-M volume back to zero. If you don't do this, you will be blasted with full volume from the ESQ-M, because of the Bx 07 7E message sent by the EPS.

If Ensoniq would revise this so that the current values of the EPS controllers were sent to the selected MIDI module, it would make a lot of people happier. If they do it right, you will be able to select the foot controller (04), turn it full on, and then select the volume controller (07) and the foot controller will stay on (as in the ESQ). This would solve the TX81 problem. Now, if you could save the foot-controller initial value on disk as part of "save parameters," so that it would be there next time you boot up...

Bio: Dick Lord has no musical chops, whatsoever. His interest in keyboards is mainly surgical. The voice behind the Upward Concepts phone, he occasionally has been known to work as a consultant in the design of pulmonary test systems (just to pay the bills). He is married to Persis Ensor, a very talented Medieval / Renaissance musician who finds it fairly difficult to relate to instruments that have power cords and MIDI cables, even when they play in meantone.

Current Ensoniq Operating Systems

INST	OS	DISK	EPROMS
EPS	2.2	X	
MASOS	2.0	X	
MIRAGE	3.2	X	
ESQ	3.5		X
ESQ-M	1.2		X
SQ-80	1.8		X

SONGWRITER SERIES
FROM
the MusicBank
80 ORIGINAL STUDIO QUALITY PATCHES FOR:
ESQ-1 AND SQ-80

Drums/Percussion

-SNARES -FAT KICK -TIMPANI
-TOMS -CRASH -RIDE CYMBAL
-HIHAT -WOODBLOCK -AND MORE!

Electronic Sounds

-HAMMOND -SOUNDS FROM HUEY LEWIS AND JOURNEY -FUZZ GUITAR
-ANALOG BRASS -DIGITAL KEYBOARDS -SYNTH PADS
-SYNTH ORGAN -OBERHEIM

Realistic Acoustic Simulations

-STRINGS -FLUTES -VIBES
-HORNS -GUITAR -STRING BASS
-SAX -SYMPHONY LAYERS -HARP

RAM Cartridge (80 voices): $59.95
Data Cassette Cart A (40 voices): $19.95
Data Cassette Cart B (40 voices): $19.95
(2) Data Cassettes A&B (80 voices): $35.00

TO ORDER: CALL (408) 353-5040 OR WRITE TO: the MusicBank 18522 MTN. VIEW AVENUE, LOS GATOS, CA 95030. PLEASE INCLUDE CHECK OR MONEY ORDER MADE PAYABLE TO: the MusicBank (ADD $2 SHIPPING AND HANDLING - $4 OUTSIDE USA). CALIFORNIA RESIDENTS ADD 6.5% SALES TAX. WE ALSO ACCEPT VISA AND M/C BY PHONE.

VISA & M/C (408) 353-5040

AS REVIEWED IN THE SEPTEMBER '88 ISSUE

ESQ ABCs: Secret Messages and Delay Effects

by Sam S. Mims

Secret Messages

Most of you probably are intimately familiar with each "page" of the ESQ-1. But there are some hidden secret messages lurking within that you may not have encountered; they require pressing two specific buttons at once before they magically appear. You will probably never need to use these pages, but they can be fun and educational to discover, and maybe one day, you will need them. Maybe.

All of the hidden pages are accessed by holding down the RECORD button and pressing a second button. Pressing RECORD and MASTER simultaneously will bring you back to the "boot-up" page, the one that comes up when you first turn the ESQ on. There's not much use in doing this, unless you just happen to forget what version of the software you have.

RECORD and MODES is pretty useless as well, but it does tell who designed the machine, and who wrote the software version you're using. Version 2.3 says "Rad software by Alex/Bill/John/Marc/Mats." (That's California talk, dude.) Then it tells you that Al (Charpentier), Bob (Yannes), and Tom (Metcalf) designed the hardware.

RECORD and COMPARE gets you to the analog tests page, very useful if you're a repair technician, and just plain fun (for a few seconds at least) if you're not. It reads out the digital positions of wheels, sliders, etc. For instance, push your MOD wheel all the way forward, then press READ. Now, MOD should read 255, if all is working. Turn the MOD wheel off, press READ, and MOD should now be zero. It's a convenient way to make sure all is well deep inside the ESQ's circuitry.

On the analog tests page, KNOB reads the position of the data entry slider (0 to 255), PED reads the position of the voltage pedal, if you have one (0 to 255), PTCH reads the pitch bend wheel (0 to 255, normally centered at about 137, give or take a notch), MOD reads the mod wheel (0 to 255), BAT monitors the health of the internal battery (0 to 24; anything over 0 means you better think about getting a new battery before your internal memory disappears), and PRS reads the pressure from another keyboard through MIDI (0 to 255, normally about 124, give or take a few).

There is also FILT on this page, which presumably reads a filter setting. None out of four Ensoniq guys knew what this was. Must not be too important... This apparently ranges from 0 to 255 as well; it normally sits in the middle, about 124.

Pressing RECORD and FILTER takes us to the filter tuning page, which checks the settings of all eight voice filters. Turn up the ESQ's volume full blast, and crank up your amp when you go to this page; you can hear each filter sweep as it tunes - a cheap thrill. If each filter reads between about 140 and 160, your board is A-okay.

The final hidden page is the most useful to the average guy like me. Press RECORD and Soft Button #1 (the upper left one over the display) to get to the erase page. The ESQ asks the profound question, "Erase all memory and reinitialize? Yes/No." When you push YES, it's all gone - all your sequences, all your sounds (except cartridge sounds) - everything, gone forever. Be sure you have all your goodies backed up on tape or disk before pressing this button.

Lest you think this is similar to putting a self-destruct button on the keyboard, be advised that this is a good button to have. Whenever your ESQ glitches out and starts displaying (and playing) gibberish, a situation sometimes caused by voltage spikes or naughty witches, reinitializing returns the operation software back to normal, possibly saving a repair bill if nothing else is damaged. Software version 2.3 on up will also reload the factory presets back into the internal memory.

Delay Effects

And now, on to more secrets - the tricks of getting your ESQ (or SQ-80) to act like it has a built-in digital delay. We'll cover some simple tricks this time, and get on to more complicated delays and reverb effects some other time.

The most basic way to get an echo is to program a sound that uses a simple downward ramp as the amplitude-control envelope. Then, modulate the amplitude with an LFO using a similar downward ramp. Now, the LFO actually controls the sound, starting it abruptly then fading with each cycle. Meanwhile, the envelope decreases the volume of each successive cycle, similar to a repeating echo.

Here's an example to try. Start with the BASIC patch, go to the DCA1 page, and change MOD1 to LFO2, with the amount set at -63. (We'll use a ramp wave for LFO2; the negative amount changes it from increasing to decreasing sawtooth.)

Now, head for the LFO2 page. Set FREQ to 26 or so - this is your control of the echo rate, analogous to the "Delay Time" or "Delay Factor" knob on a digital delay. RESET should be ON, HUMAN should be OFF. Set WAV to SAW, and MOD to OFF.

Now, we'll set up a simple downward ramp in ENV4. On that page, set L1 to +63, T2 to 38, and T4 to 40; everything else here should be zero. The "Feedback" control, or the number of echo repeats, is set with T4.

Now you should have a basic echo sound, with delay parameters controlled by FREQ (on LFO2 page) and T4 (on ENV4 page).

Our next step is to reduce the echo volume, yet leave the "original" initial volume; this gives a more subtle and more useful effect. To do this, we'll change ENV4 from a simple ramp to a two-stage ramp with an initial sharp drop, and then a more gradual slope. The sharp drop gives a good level for the initial sound, before dropping substantially for the volume of the echoes. On the ENV4 page, set L2 to +29, T2 to 19, and T3 to 37.

The trick here is to manipulate the parameters such that the first echo occurs after T2 has closed down the amplitude envelope, so changes to T2 must be made in conjunction with changes to FREQ on the LFO 2 page. Also, beware of letting notes up too soon - releasing a key before T2 closes the envelope results in loud echoes, as in the previous example.

Now, L2 (on the ENV4 page) is similar to the "Echo Balance" knob on a digital delay; turning it higher increases the volume of the echo, while decreasing it lowers the echo volume while retaining the level of the original sound.

The LFO method of creating echoes is somewhat limited, since one is not able to use the envelope generators to control the amplitude of the "original sound." The envelope controls only the echo fade-out, while the LFO takes over the sound shaping. Therefore, only sawtooth, triangle, and square waves can be used on the LFO for this. (For these LFO waveforms, turn the LFO2 amount to +63 on the DCA1 page; LEVEL should also be decreased to 35 or so.)

More complicated is the procedure of creating echoes of normal envelope-controlled sounds. The next method allows us to do this, but restricts us to only one or two discrete echoes. We'll start once again with the BASIC patch, and use different envelopes on the DCA pages to create the echoes, each envelope being similar, but slightly delayed, from the previous one.

First, we'll do a sound with two discrete slapbacks. Set up OSC2 and OSC3 exactly like OSC1. We'll simply program each oscillator to play the same thing, slightly delayed. ENV1 will trigger OSC1 immediately, ENV2 will trigger OSC2 about half a second late, and ENV3 will bring in OSC3 later still.

Set all DCAs ON, with LEVELs at 0. DCA1 should have MOD1 set to ENV1, with amount set a +63. DCA2 should have MOD1 set to ENV2, with amount set at +54. DCA3 should have MOD1 set to ENV3, with amount set at +41.

The MODES page, for this type of echo, should always have ENV=ON and CYC=ON.

Now, for the envelopes. ON ENV1, set L2 to +63, and T3 to 38. All else should be zero. On ENV2 , set L2 to + 63, T1 to 28, and T3 to 38; all else should be zero. On ENV3, set L3 to +63, T1 to 34, and T3 to 38; all else, once again, is zero. We want to set ENV4 wide open - full on, and sustaining just about forever. Set L1, L2, and L3 to +63, T4 to 63, all else to zero.

You should now be echoing twice. The sound itself is still rather bland and basic, but we are no longer restricted to that, as before, though oscillators 1, 2, and 3 should remain the same. (But changing them can be interesting, too. How about echoes that drop an octave each repeat, or echo with different sounds?) You can now change envelope parameters, though you should not change ENV4. You must also make any changes identically on ENV1, 2, and 3, since they are echoes of each other. Finally, on these three envelopes, don't change L1 from zero, and be careful with T1. This is the delay time of each echo, and the parameter is non-linear. In other words, to get even echoes in the above example, our first delay (on ENV1) was 0, our second (ENV2) was 28, and our third (ENV3) was 34 - not 56, as might be expected (2x28). Trial and error is the name of the game here (but who says your echoes have to be evenly spaced?).

And now, for our last trick of the day, we'll program a sound with only one discrete echo. The beauty here is that you can use all three oscillators to make your sound; we'll apply two envelopes to each DCA identically to get the initial note and echo.

Once again, it's back to BASIC, with all three oscillators set identically, except that this time put OSC2 an octave lower (OCT=-1) and detune it a bit (FINE=04). Tune OSC3 to the fifth in between (OCT=-1, SEMI=7, FINE=2).

All DCAs again should be ON, and set each with ENV1 for MOD1 and ENV2 for MOD2; all amounts should be +63, and DCA LEVELs should all be 0.

Again, set the MODES page with ENV=ON and CYC=ON, and set ENV4 up to be wide open as before (L1, L2, and L3=+63, T4=63, all else off).

ENV1 should be all zero, except for L2=+63, and T3=37. ENV2 should be all zero, except L2=+12, T1=25, and T3=37. Here, ENV2 is very "shallow" because it is being added to the declining ramp of ENV1; we just need a little bit extra for the echo. Setting L2 much higher creates an echo that is louder than the original sound. Here again, T1 is the delay, and T3 is the release time.

We now have a "fat fifths" synth sound, with an echo. There is, of course, plenty more that can be done to the sound itself to make it more interesting, but we're mainly concerned with adding the delay here. Please understand that this method will work in other sounds (with a bit of tweaking, for maximum effect); it's the techniques we're studying here, not the sound programs themselves.

There's plenty more on this topic, but for now, don't delay - start delaying! ▬

Tested and Approved Hard Drives for the EPS

Manufacturer	Model
Jasmine	Direct Drive 45
	Direct Drive 70
	Direct Drive 100
	Direct Drive 140
Rodime	45plus
	60plus
	100plus
	140plus
Microtek	Ultimate Series 90
Eltekon	Trump 1090
General Computer	Hyperdrive FX/20
Mass Micro	Mass 30e
Supra Drive	MačPlus 20

EYE AND I PRESENTS— Voice Crystal™ PREVEIW THEM AT YOUR LOCAL DEALER! NOW SUPPORTING: ENSONIQ® ROLAND® KAWAI®

ENSONIQ® EPS — NEW! ROLAND® S50·S550·S330

★ SAMPLER SERIES ★
EACH SERIES CONTAINS 3 DISKS WITH UP TO 4 VOICES EACH

VC1 EPS, VC2 EPS, VC3 EPS, VC4 EPS — NEW! SYNTH SAMPLES — 35.80/Series

VC1 S50, VC2 S50, VC3 S50, VC4 S50 — NEW! SYNTH SAMPLES — 35.80/Series

SQ·80
3½ disk w/80 voices plus demo sequences
VC1 SQ8, VC2 SQ8 (NEW) — 32.00 each

D10·D20·D110
128 voice RAM card with 64 voices — NEW!
VC1 D20 — 85.00 each

ESQ-1·ESQ-M·SQ·80
80 voice E²PROM cartridges fully loaded with voices
VC1 ESQ, VC2 ESQ, VC3 ESQ — 62.95 each
VCX ESQ blank E²PROM 49.95

D50·D550
64 voice RAM card with 32 voices
VC1 D50, VC2 D50 — 85.00 each
VC3 D50 (Keith Emerson card)
VC4 D50 (Jonathan Cain card)
VCX D5O blank RAM also works in D10·D20·D110

★ KAWAI® K1 ★
64 voice RAM card w/32 voices & 16 multi-patches
VC1 K1, VC2 K1 — NEW! — 55.00 each

EYE AND I PRODUCTIONS, INC.
Phone (408) 945-0139
930 Jungfrau Court
Milpitas, CA 95035

ROM MEMORY CARDS

D-50 D-20
D-10 D-110

NEW

$40.00 each

The STUDIO SERIES™ 448 New and exciting voices now available on our seven different STUDIO SERIES™ Sound Blocks for your D10, D20, D50, D550 or D110.

Top 40 • New Age • PCM
Analog • Digital • Effects
Orchestral

Demo Cassette (specify L/A synth): $3.00 p/p in USA.
(Demo Features all 448 voices played individually!) (All other countries send $8.00 for demo.)

ESQ1
SQ80 ESQ M

Orchestral • Bass Guitars • Acoustic Pianos • Brass Percussion • Electric Pianos • WoodWinds • New Age Synth Sounds • Strings • Ensembles • and many more!

80 Voice ROMS **$25.00** ea.
160 Voice ROMS **$52.00** ea.
320 Voice ROMS **$99.00** ea.
80 Voice Percussion ROM **$30.00**

Please write or call the info line for complete voice listings.

TX81Z

Add new dimensions to your TX81Z or DX11!

only **$56.00** per format

757 New Voices! On Data Cassette or Mac™ 3.5" disk for Valhala's TX81Z program or Opcode's Mac program.

DX11 Owners, our TX81Z Voices are 100% compatible with the DX11!

M256 RAM CARDS for: D10, D20, D50, D110

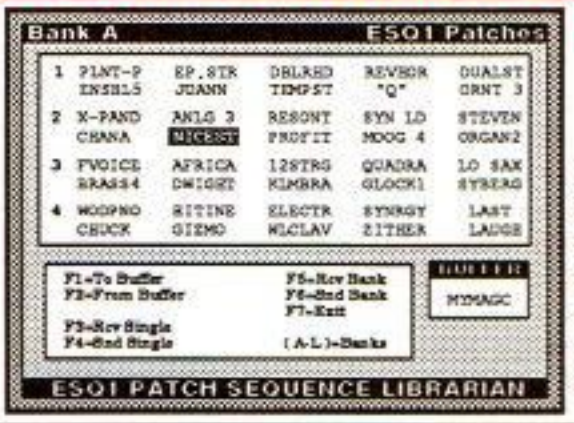
$55.00* each

*When purchased in quanities of 3 or more.

Buy 1 RAM CARD only $69.00
Buy 2 RAM CARDS only $65.00 each

For an additional $10.00 per RAM CARD you can choose any one of our seven D-50 Sound Blocks, or any one of our seven D10/20/110 Sound Blocks from our STUDIO SERIES™ to be loaded onto your RAM CARD at the time of purchase from Valhala. Indicate synth the RAM card is being loaded for.

ESQ1 COMMODORE 64 SOFTWARE



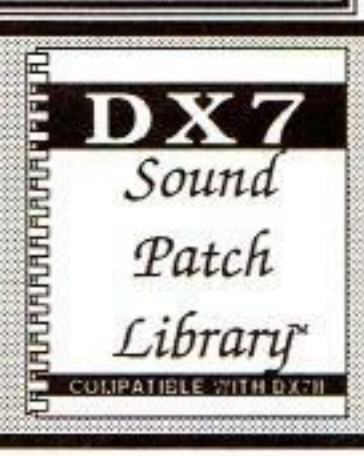
ESQ1 Patch/Sequence Librarian

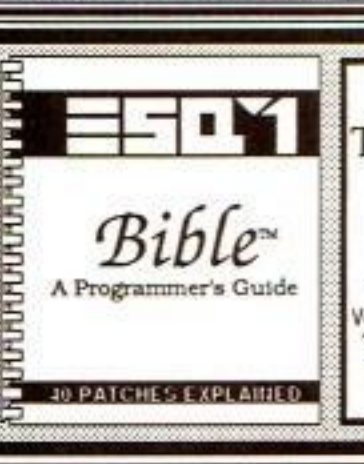
only **$65.00**

The ultimate storage program for the ESQ1 and C64! Simultaneously holds all of sequence memory (up to 32K) and three banks of voices in computer memory for instant access or simultaneous access of up to 12-banks of voices at one time for easy swapping/viewing. Permits single/bulk sends and receives. Stores up to 1560 voices per diskette. Stores single or all sequence memory (up to 32K seq. storage) to disk.

In summary, the ESQ1 program is a well-written and useful program. - **ELECTRONIC MUSICIAN** -

Valhala's ESQ1 program proves that even a 'dinosaur' like the C64 can be more than adequate for purposes such as this when the software is intelligently written. - **TRANSONIQ HACKER** -





DX7 SPL™	$29.00
TX81Z/DX11 SPL™	$25.00
ESQ1 SPL™	$25.00
ESQ1 Bible™	$19.00

Each Sound Patch Library™ has 757 new & very useful patches. Voices range from traditional acoustic instruments to New Age sounds. The only comprehensive library of sounds in printed form. The ESQ1 Bible™ will help novices to enhance their voice programming skills, and it even includes 40 patches explained.

For info requests, voice listings, assistance or to check on the status of an order call:

1-313-548-9360

Our toll-free number is for the placing of Visa or MasterCard Orders ONLY (No COD's). When calling have your card number ready along with the expiration date.

VISA

ORDERS ONLY call:
1-800-648-6434 ext. 506

MasterCard

SHIPPING/HANDLING

Mail-Orders, write down product wanted and include correct S/H fee and tax if in Mich.

Continental USA $3.50 S/H; 2nd Day UPS $6.00. Mich. res add 4% tax. Alaska, Hawaii & Canada $12.00 S/H. All others $16.00 + $3.00 for each additional item ordered. All foreign payments must be in USA FUNDS drawn on a USA bank. All ChargeCard orders under $15.00 subject to a $2.00 Service fee.

VALHALA Box 20157-TH Ferndale, Michigan 48220

Specs/ prices subject to change without notice. Studio Series (in reference to Memory Cards/Synthesizer Voices) is a trademark of Valhala Music, Inc.. This ad and text Copyright ©1988 VALHALA Music, Inc. Macintosh is a trademark of Apple, Inc.

The First Multisample

Part III - Wrapping It Up

by Barry Carson

Having worked through the first two installments of this series, we have picked an instrument to sample and found someone to play it, we've allocated memory and recorded some notes, and we have looped and begun modifying those samples with the analog parameters. It all sounds pretty good and we're all having fun. Right? You bet!

If you moved ahead and began to sample some notes in the higher ranges of your instruments, you may have come across a problem or two. If you used a blank formatted disk instead of the MASOS disk, and recorded wavesample two, you probably came upon one problem real quick. It would not be possible to play back Wavesample Two from either memory half, because the map of Wavesample One in both memory halves completely covers the map of Wavesample Two. What on Earth does this mean?

The parameters we need to know about are 26, Wavesample Select and 72, Top Key. For each half of the memory, there are 8 possible wavesamples. The first wavesample of the lower memory half will always be the sound heard on the lowest key of the Mirage. (Always, unless Parameter 27 is set to some value other than one. The value of 27 will be the number of the wavesample in the lower memory half that shows up on the lowest key of the Mirage. Leave the value of this parameter set at one for both memory halves right now. Having it set to higher values is sometimes useful but not at this point.) This first wavesample will cover as many keys as you let it. The way you control how far it goes is by using Parameter 72, Top Key. If Parameter 72 has a value of one, Wavesample One will play only the lowest note, key number one will be the top key played by the wavesample; key number one will also be the whole range of the wavesample. If 72 has a value of 61, the first wavesample will play from the whole keyboard, covering all other sounds in both memory halves. The sample's top key will be key 61, the highest key on the Mirage; the range the sample will play from is the whole keyboard, from the lowest key (1) through the highest key (61). Look at it like this. Lower Wavesample One has the power to cover all other wavesamples. The only thing that will override this power is the value of Parameter 72. Lower Wavesample Two has the power to cover all other wavesamples except Lower Wavesample One, and so on. Lower Wavesample Eight can be covered by Lower Wavesamples 1-7, but it can cover upper wavesamples 1-8. Upper Wavesample Two can cover upper Wavesamples 3-8 but it can be covered by all the lower wavesamples and Upper Wavesample One.

This all can change if you set Parameter 27 to some other value. If you pick a value of three in the lower memory half for Parameter 27, Wavesample Three will always play the lowest key and it will have the power to cover all other wavesamples because wavesample 1 and 2 in the lower memory half are no longer heard; they cannot now be played by any key at all. For now, these top key assignments should make things work: Lower Sample one, Parameter 72 = 15; Lower Sample Two, Parameter 72 = 31; Upper Sample one, Parameter 72 = 46; Upper Sample Two, Parameter 72 = 61. These are the same as the default settings in bank one of the MASOS disk. The final choice of top key assignments will depend on what split points work best which will depend on how far your samples can be transposed up and down and still sound good.

Now we can play our four wavesamples from the keyboard. But wait - let's first take a look at another problem: aliasing noise in the higher frequency notes. The Mirage really does have trouble with sounds that have lots of high frequency content. This certainly doesn't mean the Mirage is "worse" than other samplers that can record high stuff easily. Different instruments just have different characteristics and to master any instrument, one must be aware of its characteristics. If you are getting a lot of aliasing in your high frequency sounds, there are a couple of things you can do to lessen the problem. But how will you know if you have an aliasing problem? If you don't know if you have it, it isn't a problem. If your samples sound really terrible, it may well be aliasing. Awful distortion will probably be caused by too high a recording level and the sizzling that reminds you of breakfast frying will be the digital noise caused by too low a recording level. Anything else could be aliasing. The trick with this problem is to use the highest sampling rate you can (Parameter 73, value of 30 without the external sampling filter) and to keep the real high frequency stuff out of the Mirage. If you have the external sampling filter, use it (keep in mind, however, that sampling at a rate higher than 30 will throw our mapping and short loop plans out of kilter). If you are using a mixer of equalizer, turn down the high frequency controls; even turning down the treble control on a guitar amp will help.

In a simple setup, you will have to rely on the built-in sampling filter, Parameter 74. We had it cranked up to 90 for our low notes; now we can begin closing it down a little bit at a time. Keep re-sampling your notes with lower values for Parameter 74. You should find the aliasing noise abating and the sampled sound becoming more muffled. You must pick the point at which the balance is acceptable to you. Keep in mind that the default playback filter settings are pretty low, so if you cut back on Parameter 74, you can try opening the playback filter, Parameter 36, to add some brightness back to your sound. The bad news is that without lots of outboard gear, you will probably have some aliasing in your high sounds. Trying to eradicate it all will only cause you woe. The best solution I've found to these problems is explained in my article in the March, '88 Hacker. It used another sampling instrument that can record high frequency sounds with no problem. You record your sounds on this sampler and use it to drop the sounds several octaves, then sample them into the Mirage which will transpose them back up where they belong with little or no aliasing. Since half the people I know with Mirages are getting EPSs to go along with them, this could become a more viable solution for more people. A certain type of aliasing, table-lookup noise, will always be present in every sample, so any attempt to get rid of all this stuff will only be an exercise in headwall banging.

The other big problem with high frequencies will be the subharmonics produced by short loops. Those people, still trying to find long loop points don't have to worry about this; they have enough to worry about as it is. The perfect short loop of one page plays back exactly one repeating waveform. for this to happen with a sample rate of 30 however, a "C" one octave below middle "C" must be recorded into the Mirage. A recording of middle "C" will cause the short loop to play two repeating waveforms; higher notes will cram more waveforms into a single page. This itself is no real problem but it can cause one, a subharmonic. A subharmonic is a low pitched sound that is a result of any differences between the waveforms within the short loop. A loop can be no shorter than one page, so unless you can drop your sound to be sampled an octave or more with a tape recorder or other sampler or use the MASOS copy function (see page 60 of the Advanced Sampler's Guide) to make all of the waveforms the same, you will be stuck with the subharmonics. These low

rumblings are really only a problem when a group of very high notes is held and sustained. As with most of the odd noises the Mirage makes while reproducing your samples, the subharmonics will be much less noticeable in the middle of a piece of music. A danger with subharmonics or any other noise is that if you mistake it for aliasing, you will be filtering out lots of high frequency data and not be getting rid of the problem. You could end up with dull sounding samples that are still noisy.

Now we have four samples spread across the keyboard; they don't sound too bad and the loops work pretty well. We can play the Mirage and use the sound of our samples for music. A few more jobs and we will be done. Maybe the most important of those jobs is getting our samples (back) in tune. If our sounds were out of tune when we recorded them, or if we put them out of tune to help create a perfect short loop, we need to tune the samples so our Mirage will be in tune with the rest of the world.

There are a few ways to do this. One is to use some kind of external tuning device to play a sustained note (often A-440), another would be (I suppose, I've never done it) to use a guitar type tuner that uses some kind of visual feedback to let you watch the note go into tune. If you have neither of these devices, you can tune the samples in one memory half to samples in the other memory half that you know are in tune. The Ensoniq samples are in tune as long as the oscillator balance control (Parameter 34) is on zero to get rid of any chorusing effect. I find that a good clean sustained sound with a short loop is easiest to tune to. The pitch of long loops can waver; that of a short loop cannot once the detune effect is removed. Use the program change switch and Parameter 26 to select the sample to be tuned, then go to Parameter 68 and adjust its value to make fine changes in the pitch. If Parameter 68 seems to have no effect, the note you are trying to tune probably is playing a wavesample other than the one selected for editing. Change Parameter 26 and try again. Not only should you remove any detune effect from the sound you are tuning to, you should not use any of this effect on your sample until it is all safely in tune. Anyone using a short loop on a sustained sound will find that detuning the oscillators a tiny bit and adding a hint of oscillator two using Parameter 34 will do a lot to add some life to the otherwise static repeating waveform.

Well, we've got our samples recorded, looped, mapped and tuned and it sounds pretty gosh-darn good. Now it's time for those of us with synthesizer programming backgrounds to stand on more familiar turf. It's time to use the analog parameters to sculpt those raw samples into whatever final form we desire. We can do this up to four times, creating presets that can be called up instantly from the front panel. All that these presets have to have in common are the basic wavesamples (and this doesn't even have to be true); they can be utterly different from each other. If upper/lower preset one is a pretty exact replica of your electric guitar, why not change the parameters to create a string orchestra type patch using guitar waveforms for preset two, a brass section for preset three and an electronic synthesizer sound for the last preset. Of course strings or brass presets using guitar wavesamples won't sound like real strings or brass, but they could sound pretty near.

Another approach is to create slight but useful variations on the basic, realistic preset. For example: a chorused electric guitar, a bright electric guitar, guitar with lots of or no velocity sensitivity. I find it a shame to listen to people's disks and hear presets 2-4 exact copies of preset 1 or simply left on the default settings.

I've not the space to go over all of the analog parameters, but here are some that are fun to play with and useful with and useful for creating interesting presets:

The amplitude envelope - Parameters 50-59: These parameters let you recreate the envelope of your sampled sounds. A plucked guitar sample will sustain forever once it hits the short loop unless you use the envelope to recreate the decay. The envelope also lets you use velocity to control the volume level of the peak and sustain of your sound, the harder you hit a key, the louder the sound. You can control the speed of the attack with velocity; a slow key on brings in smooth violin sound while a hard key on hits you with the rosin on the bow biting into the string. Decay rate can be scaled to the keyboard so that high notes sustain a shorter time than low notes; this can be a realistic effect, hit the lowest and highest notes on a real piano and see which sustains longer. The most interesting effect in the envelope section is the velocity sensitive release rate; the velocity with which you remove your hands from the keys controls the length of the time the sound rings on. This somewhat esoteric parameter can be used for some unusual effects although a new keyboard technique must be developed to use it effectively.

The filter envelope - Parameters 40-49: These parameters work in the exact same way as the amplitude envelope parameters. The brightness of most decaying instrumental sounds fades away before the volume does. Once a sample hits the loop, the tone color will remain constant, even as the amplitude envelope fades the volume away. Using the filter envelope to fade the brightness away as the volume decays can create a more realistic effect. Nothing can make a flat, unresponsive sound come alive as much as adding a lot of filter velocity control along with the amplitude velocity control. The ability to open the filters with expressive playing can make almost any set of samples a joy to play. Of course, you have to have someplace to go. A dull sounding sample that has to have the filter wide open to begin with won't benefit much from velocity controlling the brightness. Velocity can also control the amount of chorusing or detuning and the balance between two samples (Parameter 35). This combination of velocity controlled effects can make the Mirage one of the most expressive keyboards around.

After the hard work of sampling and looping, mapping and tuning, using these parameters can be a lot of fun and an exercise in creativity. To use an analogy (I guess we can use an analogy since we are talking about analog parameters); after the hard work of baking the cake, it's time to get out the colored icing and put on the fancy flowers and stuff. But we get to do it four times over. Even if you create one exact replica of your acoustic instrument, you still have three presets left to have some creative fun with.

You're really done. Now it's time to sit back, admire and enjoy your work. These sounds are uniquely yours. Since all synthesizer patches use the same raw material, it is possible (though somewhat unlikely) that two programmers will come up with exactly the same sound on the same piece of equipment. A sample is exclusively yours; the waveforms you have recorded will give your patches their own distinctive sound. It's time to invite some people over. Buy some expensive beer or some cheap wine. Make a party of it. You've created a neat new sound on an instrument that the experts all agree is obstinately difficult to program; show off your stuff. Let people hear it, let people play it. Of course you're going to want to clear all these folks out pretty soon so you can start work on your second multisample!

Bio. Barry Carson teaches English Literature, plays music, draws pictures, makes lots of samples, has fun with his kids, writes fiction and Hacker articles, and washes the dishes almost every night. In his free time he wishes he had more free time.

Using the EPS Sequencer Live

by: Bill Lewis

The sequencer in the EPS is probably the most useful MIDI recording device ever incorporated into a keyboard instrument. Aside from the fact that it won't velocity scale a track (I know there's a track mix down mode in OS 1.95 and higher, but it's not the same), it rivals many of the software sequencers on the market. As a tool for live performance, it's in the cat's set. But to use it effectively it's necessary to develop a few conventions before you show up at the Salty Dog for a night of rocking the house.

Many of my gigs are solo endeavors and when there are other musicians on stage, I'm usually still the dude calling tunes while we all play along with the sequencer. One of the biggest problems encountered when using a sequencer live is load time between tunes. The EPS has nicely solved this problem as it often takes longer to push the buttons then it does to load the next sequence. The trick to keeping the flow going and the dance floor full is setting up the next song BEFORE the current one ends.

As a memory aide, I keep a printout of the tune list taped to the top of the EPS. When I reach a point in the song where one hand is free (and while the sequencer is running), I scroll through the disk directory to find the next song. When the current song ends, just hit LOAD and YES, and the next tune will be in memory before the audience has stopped slam dancing. It's even possible to pop in a new disk and ask for a directory while the sequencer is running thanks to the foresight of the EPS designers.

Some of my material began life in a computer based sequencer and when it was transferred to the EPS, became a L - O - N - G sequence instead of an EPS song (concatenated strings of shorter sequences). While the EPS operating system will only allow one song in memory at a time (a situation we hope will be changed in the future), up to 80 sequences can be there. A very long sequence will cause a "FILE IS TOO BIG" message to be displayed if there's not enough memory to accommodate it. To be sure all possible memory is available and also reset the pointers, create a song of one sequence. This will clear memory before loading and ensure all unused RAM (space not taken up by instruments) is available.

A more important convention is standardizing the instrument setup, especially when you're running a floppy disk based system. Remembering what instruments are at what patch numbers can become a full-time occupation, one that will quickly curtail your rapport with the crowd. Of course a hard disk drive can make life much easier in this regard, but I've found with a bit of preparation, a floppy based system can be used quite effectively.

At the risk of being accused of heresy, the first thing you have to do is forget your drum machine has a sequencer. You can still create the drum patterns in the drum box (although I don't know why you'd want to) and then set the EPS to external clock and record the patterns into the EPS. I've even forgotten the drum machine, but my drum kit takes up about half the memory of a 2x EPS. Having the drum sounds outboard frees a lot of space and does have merit, just dedicate a track/instrument button to percussion parts and FORGET about it.

Another instrument button I've dedicated and forgotten is bass. The same rule applies; find a good bass sound or use an external synth, put it on an instrument/track button and leave it there. Now the rhythm section is set and you won't have to think about it.

The more esoteric parts of orchestration come into play when we begin adding chordal instruments. What do you do with those other six instrument buttons? I dedicate one to keyboard parts, one to horn parts, one to strings/pads and one to guitar, leaving two float. Unfortunately, I can't get all of this into a 2x expanded EPS at one time and interestingly, I've found that I can leave out the horns in guitar tunes and leave the guitar out of horn tunes. I'd rather have it all, but it looks like we're just going to have to wait for 4x. With a bit of creative sound design and efficient memory management, the EPS "band" can be stuffed into a 2x machine.

The last item to consider is disk management. I use two approaches to this in a floppy based system. The first is to keep sequences on one set of disks and sounds on another. Sequences that use the same instrument setup reside on the same disk, minimizing floppy swapping between tunes.

The alternate approach is to put songs and sounds on the same disk. Again, these songs should use the same sounds. Unfortunately, when loading a Soundbank, the EPS will replace an instrument even if it's already in memory. The key once again is preparation. Since the instruments I change are the keyboards, horns and guitars, I keep tunes that alternate these sounds on the same disks as the sounds. Secondly, I've set up Soundbanks which load only those instruments that need to be changed, in some cases saving them with the song and again, all on the same disk. To do this, you must clear the instrument memory of all sounds that will NOT be changed when loading the new Soundbank before saving. Now, only the sounds that need to change are shuffled. If you want the song to be loaded as well as the instruments, be sure it's in memory before you save the Soundbank.

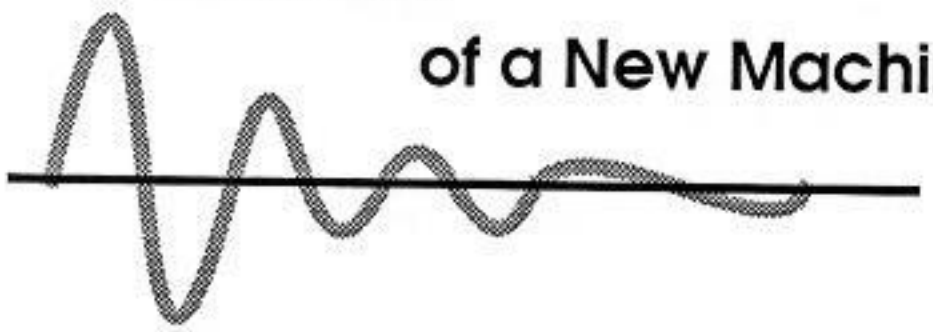
Of course this takes more time than merely loading a song, but that's where knowing you're audience comes into play. But this is an article about playing sequences, not people. We'll leave the discussion of audience psychology for another time.▬

Bio: Bill Lewis is the Senior Editor of Music, Computers and Software magazine as well as the Wizard Sysop on the Compuserve MIDI Forum where you can reach him at 76701,35. He's been playing electronic instruments since 1965 when he first plugged his saxophone into an electronic pickup and a Maestro unit.

Soundprocess™

Digital Synthesis for the MIRAGE

The Mind of a New Machine

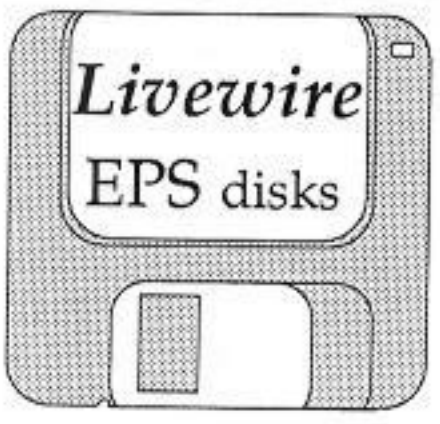


The innovative NEW Operating System that turns your Mirage into a digital synth.

48 multi-timbral sounds per bank !

SOUNDPROCESS OPERATING SYSTEM.....$245.00
SOUND DISK-2 NOW AVAILABLE.....$25.00

Triton Box 395 Grand Island, NY14072 (716) 773-4085



Livewire is the only company to offer 16-bit digital samples created in their own studio. We use only the finest mic's & digital processing for the ultimate sound quality (NO 8-bit Mirage sounds in our EPS library!). Our sounds come with 4 patches per instrument, and are used on record albums by numerous artists. Need proof? Order our demo tape ($6) and hear for yourself!

PRICING: Now order any 5 disks from our sample library for only $69 plus shipping. Or, order 10 disks for $129 and get a free carrying case. Order all 51 disks for only $399 - less than $8 a disk! Our EPS disks include:

Analog synths, clean D-50 & M1 sounds, massive MIDI stacks, additive synthesis.

The most complete collection of drums & percussion anywhere.

Bells, organs, electric piano, concert harp & 3 different grand piano's.

Alto, tenor, and soprano sax, flugelhorn, all kinds of trumpets, brass hits, etc.

Violin section, cello, Orchestra Hits, and more strings.

Rock lead guitar, acoustic & classical guitar, clean Strat, metal fifth's.

Vocals, Harmonica, TONS of basses, Performance Disks & our "Unusual" disks.

YES!

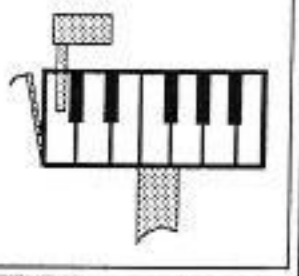
We still carry disks for the **Ensoniq Mirage** sampler, as well as disks for the **Casio FZ**, and sounds for all popular synths. Send in a stamped, self-addressed envelope for more details.

Personal checks allow 30 days for delivery. Foreign orders: pay with bank draft drawn on a US bank. New Jersey residents must add 6% sales tax. Sorry, no COD or phone orders.

SHIPPING: Write for details. Demo cassettes are postage-paid in the US. Canada & Mexico add $3 for demo shipping, overseas add $5. **Please send stamped, self-addressed envelope for FREE disk list and ordering details.**

Livewire Audio

PO Box 561 - Dept. TH
Oceanport NJ 07757 USA



Cybersoniq, Volume 2

A Review by Dave Caruso

For: Mirage.
Product: Cybersoniq Volume 2 (formerly "Synthbank Vol. 2").
Price: $39.95 (Limited Special - Vols. 1 and 2 for $64.95).
From: Cybersoniq, PO Box 1771, Madison Square Station, NY, NY 10159.

First came Cybersoniq, Volume 1, a Mirage disk set from Cybersoniq that offered forty-eight advanced wavetables (sixteen per bank) with original samples made from FM/additive waveforms, PD synthesis waveforms, acoustic source, and analog synth waveforms. Using the Ensoniq Mirage O.S. 3.2, and the built-in tricks available on the Mirage such as program select, top-key sample hiding, and wavesample select, this disk allowed its owner to choose from thirty-two patch possibilities on both halves of the keyboard, for a total of sixty-four patches on one load!

Now comes the long-awaited Volume Two. This disk set works in the same way as Volume 1, with a few twists. First of all it provides a whole new set of forty-eight wavetables, and this time they were created with crosswave, FM, and additive synthesis. Secondly, it's been a year since Jordan Scott of Cybersoniq created the first volume, and after spending all that concentrated time with the Mirage, Jordan really got into its inner workings and particular characteristics. This means that he went into the making of Volume 2 that much wiser. This should be evident in the quality of sound and strategy of sample arrangement.

You might be a bit confused about what the Cybersoniq disk actually is, what it does, and whether or not you should buy it. Well, in the first paragraph of section 2.0 of the User Guide it says, "The whole point of this disk is to get lots of sounds out of the Mirage quickly." That's exactly what it does. Basically, it's an exercise in squeezing a lot of good sounds into the same space of memory that on a typical Mirage disk might only contain a few longer samples. Of course, care must be taken so that making lots of shorter samples doesn't result in lots of noise, and some complex samples, such as an acoustic grand, would not be suited for this kind of project. After examining Volume 2 in detail, I can tell you that these are clean, clear, usable samples.

As to whether or not you should buy Vol. 1, 2, or both, you can look at it a lot of ways. The person who simply wants more samples will get a lot (192 patches) for the money. The person who wants a variety of samples (not just acoustic instruments, which Ensoniq has almost specialized in to the exclusion of synthetic sounds) will also be satisfied. The hacker can go to town mixing and matching these disks with each other and with any Mirage disks, and also customizing their own disks by lifting samples from the disks and copying them onto their own. (These disks are not copy protected. Let's not abuse this.)

Using the standard 3.2 OS makes it not only compatible with the entire Ensoniq Mirage library, but also with Soundprocess (although some work is required to get each sample into the Soundprocess domain).

Volume 2 comes with two disks. The biggest difference between them is that Version 1.1, the "Whole" disk, allows each sample to be played across the entire keyboard (except for the upper samples, which by this arrangement can be played on any note but the lowest one), whereas Version 1.2 will split the sounds into upper and lower keyboard halves. This is something you might've wanted to do anyway, and Cybersoniq went ahead and saved you the time and trouble. The other difference between the disks is that the Whole disk contains a "Multi-Waveform Package." As explained on page seven of the User Guide, Cybersoniq has thrown in a sine wave, square wave, square with pulse width modulation, triangle wave, pulse modulated, and FM modulated sine wave just for good measure on the Whole disk. These are sort of "hidden" in the disk because they aren't accessible by the preset program and wavesample parameters. However, the locations of these waves are given in the guide, and you can get to them by merely reassigning a few parameters. A nice touch! Cybersoniq confesses in the User Guide that this inclusion was due to an accident in memory allocation during sampling. You shouldn't have told us. Next time, just say, "I meant to do that..."

With all this talk about a User Guide, I want to mention that this sixteen-page booklet is included with either volume. It's extremely well-organized and written, and it contains lots of valuable information and advice for getting the most out of your Mirage (with any samples).

A patch card is also included with the set. This lists all 192 patches and tells you how to access them. A great help! I only wish Cybersoniq hadn't used "L1, u1, L2, U2, etc," as abbreviations for programs, not banks. Also, it would be nice to have all of these patches on one side of the card, so you don't have to flip it over see the other half of them. I suppose that wouldn't be as cost effective, though, and a pass on the copy machine can give you the same results. Finally, it would help the novice to have "P27" printed with the heading "Wave #". That way it would be obvious that this parameter is responsible for accessing the numbers in that column.

Here's a quality, affordable product from Cybersoniq. For more information, write to Jordan Scott at Cybersoniq using the above address. For a review of Volume 1, check out Transoniq Hacker Issue #31, the last colorless, boring-looking issue (remember, folks? - Maybe it'll be a collector's item someday). In that review, Erick Hailstone tells you what you'll get and how to use it. (And since Volumes 1 and 2 are similarly operated, future Volume 2 owners might want to look at that issue, too.) With the word "Wavetable" thrown around quite often in the User Guide, those unsure about the term should check out "Wavesamples and Wavetables" on page 19 of Issue #34 of the Hacker. Duane King explains these and other mysteries of the Mirage. While you're at it, leaf through your back issues for Jordan Scott's name. He's authored several pieces, most notably "Using the Mirage As a Synthesizer" on the front page of Hacker Issue #28.

One more thing - there was a release in the Hacker, Issue #40, about Cybersoniq Vol. 1, Version 2.0 (Split). An upgrade for this disk was made available to owners of the original Vol 1 for $5.00. See Hypersoniq in that issue for details. ■

The Patch Bay

Patch reviews by Chris Barth

For: ESQ-1
Product: Voice Crystal, Volume 3.
Price: $63 for 80-voice E2PROM, $16 per 40-voice data cassette
From: Eye and I Productions, Inc., 2151 Old Oakland Road, #224, San Jose, CA 95131. (408) 943-0139.

Voice Crystal, Volume 3

In early 1987, when ESQ patches were limited to the initial offering from Ensoniq, Mark Wien's Voice Crystal (reviewed in the July 1987 Hacker - #25) stood out as the premier third party patch collection. Excellent keyboards, warm orchestral sounds, and still the best imitation Moog patches available from any source. Volume 1 was followed by a second collection (reviewed in the November 1987 Hacker - #29), notable chiefly for an extremely realistic Scottish bagpipes patch. This month we'll take a listen to Volume 3 and see how well these patches compare to their predecessors.

As usual with Mark's stuff, the keyboard patches are well programmed and instantly usable. CHORPN has a rich full sound across the full length of the keyboard. WRLTZR is a nice electric piano patch; CHMPNO is a Yamaha DX7 styled synth piano patch. REEDPN covers the same ground with a darker tone.

You can always take a VOICE CRYSTAL with you to church; PIPES is a very big, very rich organ which complements the organ patches from Volume 2. There are three other organ patches which are Hammond variations and all excellent. At softer volumes they would be suitable for jazz or recital playing; for you Hackers over the age of 30, if you play them loudly through a guitar amp with enough distortion, you can get the old Hammond sound which can be heard on records by the Band and Three Dog Night (and if you are over 30, you know I'm talking about "Chest Fever").

I love new sounds with a traditional flavor and CARILN fits that bill; it sounds vaguely organ/bell-like without using any bell waveforms. How he do dat?

Compared to other patch collections, the VOICE CRYSTAL has never really been strong with fat synth pads, emphasizing a more natural, acoustic sound instead. This is not the case with Volume 3, which offers big power sounds like SYMPHNY, LASYN, BELSYM, and BELSTR. Some patches, like the appropriately named FULNES, introduce motion into the sound as the keys are held, and sound like they fell out of the HEAVEN collection.

The standout in the collection is CHAMBR, a reedy pad with a string attack. This is a new sound to these ears and folks, if you play this slowly and with feeling, it sounds very sad, very lonely, like a bassoon without a job. It's full of character. I found this patch late one night and was captivated by it for a few hours before I could leave it.

There are two fiddles - NEWFDL and NEWBOW. The former adds some synth sustain to the fiddle sound to create a great solo sound. NEWBOW is closer to an acoustic imitation. Both patches work very well.

There are percussion patches: LOGDRM (very effective), SNRDRM and PWRSNR (ok but I have a hundred of these now), POTPAN (sounds like steel drums in the distance), PWRTOM (more like a kick than a tom) a closed HIHAT3, and SRMST3 (kick drum split with SNRDRM). The two best are SYNDRM and SIMONS, which sound like the electronic Simmons drum set.

There are two pleasant surprises in this set. I love playing Christmas songs in season and with a little beauty called XMASBL, I think it's time to get some ESQ carols into the sequencer in time for the holidays. The accordion patch is very convincing when you first play a chord, with a swell sounding after the initial attack. I never figured out the right way to imitate a real accordion player, though, and as usual, there were no performance notes to light the way.

There are around ten brass patches, most of which use pulse waveforms instead of sawtooth waveforms. Those that do are buzzy to the nth degree. The saw waveforms seem to work so much better. Overall, the brass make up the weakest spot in an otherwise fine collection.

But hold on - there's TRBONE to the rescue! Now this one knocked me out. This trombone patch is classic, a shining star, a definite keeper. I particularly like the muted vibrato which is built in. It's particularly well suited for solo lead melody performances. With a little pitch bend technique, it's got a tremendous amount of potential.

The basses vary in quality. Three of them sound like the same old stuff compared to FRETLS, which is so deep and thick it reminds me of a tuba dipped in molasses. The one which no Hacker should be without is STEVIE (as in Wonder, not Winwood). This is the sawtooth synth bass which you can hear all over his records. It's loud and fat and absolutely indispensable for funk and dance music applications. You might also like MOOG 1 and MOOG 2, which continue the high standards set in earlier Crystals.

New age sounds make up around one-third of the set. These are new synth sounds, with and without keyboard attacks. "New age" tends to be a catch-all category for synth sounds which do not imitate traditional acoustic instruments. CRYSTAL sounds like it comes from the CESIUM collection; FRLITE is a bell/voice combination light enough to make me wonder why people spent so much money on the Fairlight synthesizer.

There are only a few special effect patches, one of them a realistic imitation of CRIKETs. Actually, as patch collections go, there's really something here for everybody. It's a shame Mark doesn't provide a demo tape, because I think these sounds would find wide acceptance if more people could audition them up front. As a final comment, the VOICE CRYSTAL cartridge itself is very well constructed of heavy-duty plastic. It looks like it's going to be around long after the lithium battery in it (and the ESQ around it) have gone on to their reward.

For: ESQ-1/SQ-80.
Product: Proselect Voice Series.
Price: Demo Cassette $5.50 - 80 voice cassette $25 ($35 with additional 80 Shriek voices) - 80 voice ROM $35 - 80 voice EEPROM $55 - 160 voice EEPROM with 80 voices $90 when available.
From: Technosis, 3960 Laurel Cyn. Blvd., Suite 353, Studio City, CA 91604 (213) 656-3515.

Technosis

Back for round 2 is Mike Peake from Technosis with 80 of his ESQ/SQ-80 Proselect patches. A few sounds are carried over from his first set of patches, which was reviewed way back in Issue #32 of the Hacker. The first set was a delight in its bold use of grungy, noisy, and downright nasty patches best suited for the punk rock set; it also included some excellent new age and bass sounds. My favorite (which was imported into the new collection) is still PLUCKED, a repeated bass sound created especially for those who love sequenced bass lines. The extensive liner notes tell you how to edit this patch (which is perfect without any edits) by adjusting its decay, or its

"crispness," or its "pluck," or its "wetness" (not what you think). Mike even tells you how to get velocity to control the patch's volume or tone. Really, I've learned more about editing patches from Mike's liner notes than just about anything else (except the Hacker)!

Most of the harsh attacks which highlighted the first Technosis set are absent here. Instead, this is a much more commercially oriented set for more traditional performers, like rock and rollers. Let's start with the bass patches - this is the fattest set of bass patches I've come across in two years of reviewing ESQ sounds. Most of the bass patches I hear have an interesting high end but are sadly deficient in "bottom" - a missing low end that instantly clues in the listener that the bass is coming from an ESQ. I was totally floored by the bottom present in these bass patches. MO'BEEF, BIG BASS, GROWLY, ZAP BASS, and of course PLUCKED, among others - I erased every bass sound I'd collected in the last two years and substituted these instead. Actually, I didn't erase anything, but from now on, the PROSELECT basses are my first choice; if I want different sounds, I'll layer another bass on top of a PROSELECT one. The air really moves when you play these sounds. Just make sure that your audio system can handle them!

The synth pads are very good. There are some bright ones (like THE PAD and BIG PAD) and some softer ones (like MORTAL). The edit notes are such that with a little effort, these pads could be all you'd ever need. SYN BRASS is probably the ultimate in synth brass patches; if I was stuck with only one to use, I'd choose this one.

Wanna know what radio sound has generated the most inquiries for an ESQ sound-alike patch? Here it is, one year later, "JUST TO SEE HER," the DX-7 brass/piano sound right off the Smokey Robinson 1987 hit single. It's not an exact duplicate, but it's close.

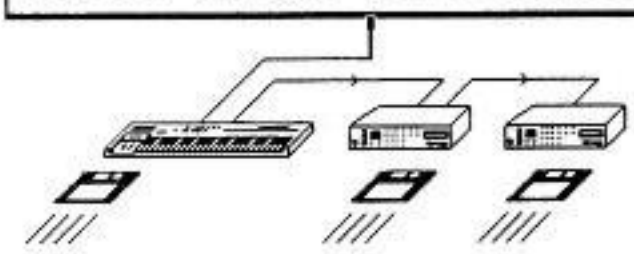
The one thing that impresses me most about this set is Mike's exquisite taste in vibrato. In many packages I review, the vibrato introduced by the mod wheel is way off the mark: the frequency setting (which determines speed) for the LFO is unrelated to the character of the patch, and the depth of the LFO modulation is set too high at 4 or more. The result is a mod wheel effect that can usually be described as goofy. This is not the case here. The vibrato introduced by the mod wheel on most of these patches is subtle and in keeping with the character of the underlying patch. There are ten or so keyboard styled patches which are mostly in the DX-7 vein and they are all well presented and useful. With the vibrato, they're some of the best available.

I look back on the 40 sounds which make up Bank 1 and find that this is one of the best sets yet. No question, you could make some pretty exciting demo tapes using these sounds, especially for rock and roll type material. Excellent basses, good thick pads, and new (to these ears) keyboard sounds.

The second set of 40 patches switches gears somewhat, featuring PLEAZING, GLASSY, and my favorites, NICE, NICER, and NICEST (I agreed), in a more new age setting. What makes them a little different from the usual plunks and doinks is Mike's use of sine waveforms where one would usually expect bell waveforms. There are a couple of ok clavinets and a harpsichord, a realistic, natural sounding kick and snare, a passable clarinet and a thin bassoon. There is a ride cymbal, but it's missing the sound of the drumstick hitting the bell; it sounds more like a drummer playing with brushes. The hi-hat lets you alternate open and closed sounds using just one patch.

Sometimes listening to so many new patches all the time depresses me, especially when lots of filler surrounds the occasional work of art. Then along comes a set like this one, with no filler to speak of, talent oozing from each parameter setting, and some REALLY BIG sounds - aahh, this is the life! ▬

Turbo-Charge Your MIRAGE™



The Powerful New

MIRAGE™ Super-MIDI Disk

MIDI volume controllers for upper and lower
Assignable for each sound program and saved on disk
Use with the new MIDI wind instruments
Sostenuto pedal - MIDI or using sustain pedal
All controller inputs and outputs assignable
Separate MIDI transmit / receive channels
Single button program stepping "All notes off" PANIC button
Optional MIDI controllers to Local ±2 Octave pitch transpose
MIDI Overflow mode for 16 note polyphony

--- all this and more ---

SM-1 Super-MIDI Disk $39.95 + $2.50 Shpg.

The Mirage Disk that Electronic Musician rated five-star in their review

The Mirage Multi-Temperament Disk
14 Historic 12-tone Temperaments
24 Note Transpose

"I've never had so much fun with a single Mirage disk ever"
- Don Slepian, TRANSONIQ HACKER, March '87 #21

MT-1 Multi-Temperament Disk $29.95 + 2.50 shpg

Micro-Tonal Scales

Wendy Carlos' Alpha, Beta, Gamma
Create your own - Save them on disk
UD-1 for Mirage™ $39.95 +2.50 shpg.

Hack Your Own OS
Use your computer to make your own version
OS-1 Monitor Disk $39.95 +2.50 shpg

NEW versions of Ensoniq's 3.2 operating system from Dick Lord - UPWARD CONCEPTS

VISA (603) 659-2721 MC Bennett Rd., Durham, NH 03824

Making EPS Pitch Table Libraries

by Gary Morrison

Well, it looks like Robert Rich beat me to it - I had an article about EPS pitch tables all ready for publishing, then out comes his "Tuning the EPS" (July, Hacker #37, page 18). Actually, it turns out to be something of break for me. His article very concisely summarized how to make pitch tables, where I wanted to talk about how to use them. Since he's taken care of all of the fundamentals, I'll get into how to calculate them and group them into libraries. Since pitch tables do not appear to be covered in the Musician's Manual nor in the Advanced Applications Guide, it's important to cover the topic thoroughly in the Hacker.

A Few Additions to "Tuning the EPS"

If you haven't had a chance to read Mr. Rich's article, set this down and read it now. I have a few quick additions to his thoughts:

First, I agree with his lament that pitch tables can't be saved in themselves, like an instrument, a sequence, or a song. I think, however, that the fact that they are stored as portions of an instrument definition (up to 8 of them per instrument) can be a blessing in disguise. The instruments can become something like a volume of an encyclopedia, each containing up to eight related pitch tables. This is especially critical for microtonal tunings as we shall see.

Second, one very critical piece of information needs to be stressed a bit harder than it is in Mr. Rich's article: Even though pitch tables are stored as part of an instrument, they are not used by an instrument. By this I mean that you can't tell the instrument to use thus-and-so pitch table in one simple command. Pitch tables apply to layers. To get a patch to play according to a pitch table you have created, do this:

1. Use Edit:Layer (ie., press "Edit" followed by "Layer") in the instrument containing the pitch table you want to use. Find (with the right/left arrow keys) "PITCH TBL =". Choose the pitch table you want with the up/down arrow keys. Press Command:Pitch and use COPY PITCH TABLE to the instrument you want to use the pitch table.

2. Select the instrument on which you want to use the pitch table by pressing its Instrument/Track key, then press Edit:Instrument then use right/left arrow buttons to find "OO PATCH =". This tells you what layers are used in a given patch (pressing the patch-select buttons changes the layers appropriately to each patch).

3. Use "PITCH TBL =" under Edit:Layer to set each of those layers to your pitch table, just as we did to find the pitch table to copy over to this instrument.

I admit that this is a little tedious if you have a lot of layers in your instruments, which is why I wish Ensoniq had made pitch tables apply to patches instead of layers, but then again we customers are never satisfied, are we?

Third, I think it's worth elaborating on the EXTRAPOLATE PITCH TBL command. Mr. Rich alluded to it in the seventh paragraph. He mentioned that they can be used for octave- or non-octave-based scales, but didn't get a chance to elaborate on it much.

As he mentioned, you can enter a pattern of intervals and have the EPS extrapolate that pattern across the entire keyboard. In other words, it duplicates that pattern across the successive keys on the keyboard. You might ask, "Well, if it doesn't extrapolate the pattern in octaves, how does it know where to put the next duplicate of the interval pattern?" The answer is, it duplicates the pattern in increments of the length of the pattern. Here's a graphic analogy that might help you visualize it. Let the distances between "*"s below represent interval between the pitches of the keys marked above them. Suppose this is your pitch table:

```
C       C# D       D#  E
*       *  *       *   *
```

Thus, C and C# have a large interval between them as do D and D#, but C# to D is a smaller interval. If you EXTRAPOLATE PITCH TBL such that SOURCE LO=C2 HI=E2, here's how the keyboard will be tuned:

```
C     C# D     D#  E     F  F#    G   G#    A  A#    B
*     *  *     *   *
                  *     *  *     *   *
                                      *     *  *     *etc.
```

As you can see, it sets the pitch of the lowest note in the next extrapolation of the pitch table to the exact pitch of the highest note in the previous extrapolation of the pitch table. This is a very elegantly-devised command on Ensoniq's part.

One final note on Mr. Rich's article: A "CENT" in a pitch-table entry is the standard unit for measuring small pitch differences. It represents a pitch change of one one-hundredth of an equally-tempered semitone.

Making Libraries of Scale Systems

On page 47, the Musician's Manual describes how to make a "MIDI instrument." The purpose of a MIDI instrument is to allow you to play other synthesizers over MIDI from your EPS without eating up lots of memory on all of the wavesample information needed for a normal instrument. You can use the same idea to create what I call "library instruments" to contain groups of up to eight related pitch tables without eating up lots of disk space on wavesample information. Indeed they can be very small - only about four disk blocks.

To create library instruments, I use two instruments. One is a single-layer "test instrument" and the other is the library instrument itself. To stock a library instrument full of pitch tables, you can use the single-layer test instrument to edit the table and verify the results, then copy it over to the final library instrument as described earlier.

First thing we need to do is freshly boot your EPS so that we will be starting from a common framework. Then load some simple instrument, like the "Legato Flute" as instrument #1. Next, we need to create the single-layer test instrument: Press Command:Instrument, then find CREATE NEW INSTRUMENT. Press Enter/Yes and verify that you want to use instrument #2. Reselect the Legato Flute. Press Edit. Select layer 3. Now press Command:Layer and find COPY LAYER. Press Enter/Yes and verify the copy to instrument #2 by pressing Enter/Yes. Instrument #2 is now a simple instrument you can use to create, edit, and verify pitch tables. Go ahead and delete the Legato Flute using DELETE INSTRUMENT under Command:Instrument.

Now use the same procedure as above to create the library instrument; use instrument #1. Since the library instrument contains no wavesamples, to use a pitch table from that library, you must pass it over to the actual instrument. To do that, the library instrument must have at least one layer. Press Command:Layer, then find CREATE NEW LAYER and press Enter/Yes.

Let's go through an example of how to calculate a pitch table and extrapolate it. This scale will split your keyboard up into two keyboards - one with only white keys and one with only black keys. As you can see, we have five black keys per octave (C#, D#, F#, G#, and A#) and seven white keys per octave (C, D, E, F, G, A, and B). Rather than mapping the blacks and the whites onto one single scale of 7+5 (twelve) equally-spaced steps per octave ("12-equal" so to speak), we shall map 7-equal onto the white keys and 5-equal onto the black keys. (What would Paul McCartney and Stevie Wonder say?!) The C and C# in the same octave will play the same pitch. The black keys will split that octave span from C# to C# into five equal pieces and the white keys will split that same octave span from C to C into seven equal pieces.

The calculations for this one are also pretty easy: since we have 100 cents per semitone and 12 semitones per octave, we must have 1200 cents per octave. If we break those 1200 cents into five equal pieces, the black keys will be 240 cents apart because 1200/5 = 240. The white keys will similarly be 1200/7 = 171.4 cents apart. Our pitch table can then be calculated thus:

Key:	Calculation:		Pitch Table Entry:
C	171.4x0=0		KEY C4 = C4 0 CENTS
C#		240x0=0	KEY C4+ = C4 0 CENTS
D	171.4x1=171		KEY D4 = C4+ 71 CENTS
D#		240x1=240	KEY D4+ = D4 40 CENTS
E	171.4x2=342		KEY E4 = D4+ 42 CENTS
F	171.4x3=514		KEY F4 = F4 14 CENTS
F#		240x2=480	KEY F4+ = E4 80 CENTS
G	171.4x4=686		KEY G4 = F4+ 86 CENTS
G#		240x3=720	KEY G4+ = G4 20 CENTS
A	171.4x5=857		KEY A4 = G4+ 57 CENTS
A#		240x4=960	KEY A4+ = A4 60 CENTS
B	171.4x6=1029		KEY B4 = A4+ 29 CENTS
C	(Back to C)		KEY C5 = C5 0 CENTS

Now EXTRAPOLATE PITCH TBL thus: SOURCE LO=C4 HI=C5.

I find the seventone-per-octave scale is especially fascinating melodically. It is the perfect scale for atonality - our ears expect it to be some sort of major- or minor-scale, because it has the same number of tones, but it has no whole-step/half-step distinctions in it.

Let's take the time to name the pitch table we just created. Things can get confusing if a library instrument contains eight unnamed pitchtables! Press instrument #2, then Command:Pitch, then find EDIT PITCH TABLE. Press Enter/Yes, then push the right/left arrow keys until you get to the naming field. A good name for this one would be "7ET + 5ET" (ET meaning "Equal Temperament", not the little green man). Press Enter/Yes then find "COPY PITCH TABLE" and press Enter/Yes. It says "TO INST=UNNAMED INST". The unnamed instrument is our library instrument. Press Enter/Yes again, and the display says "PITCH TABLE 1 CREATED". (Don't worry, it didn't rename our pitch table back to "PITCH TABLE 1".)

Grouping Pitch Tables

Keeping your pitch tables in logical groups is important because often you will use them in groups. One good reason to use them in groups is to compare two or more systems for various desirable qualities.

Probably the most important reason to deal with scales in groups though arises when we try to play microtonal scales, which will have more than 12 tones per octave. How do you map such a scale onto a traditional keyboard? A lot of scales, such as 15-, 17-, 19-, 22-, 24- and 31-equal can be grouped into 12-note subsets. These all have clearly definable major- and minor-scales and can play traditional music. 19- and 17-equal, as an example, use the exact same note names as our normal scale, except that they have separate sharps and flats. You can therefore create one pitch table that has the naturals and the sharps and another that has the naturals and the flats. The best thing about it is that you can use the patch-select buttons to switch between the two. Even better, you can get Ensoniq's dual foot-switch to switch them and let your hands do what they do best.

In such systems, you will want to keep these groups of pitch tables (none of which forms a complete system in itself) as part of the same library instrument. You might even want to make them the only pitch tables within their own library instrument. In that case, you might want to have another level of grouping to use. You might, for instance, want to group all of your microtonal equally tempered scales into a group called "MICRO ET". Your library instruments could then be called simply "19", or "22 SHARP". If you don't group them up like this, you might run into some difficulties coming up with descriptive 12-letter names. When you group them, the names only need to carry the information not conveyed in the names of higher-level groups.

EPS Hierarchical Directories

The EPS provides a nice method of grouping instruments (or anything else you can save onto a disk). Like many popular computer operating systems, such as UNIX or MS-DOS, the EPS has "hierarchical directories." Like pitch tables, these do not appear to be documented in the Advanced Applications Guide either.

A directory is basically like a phone directory - it lists all of the files on the disk. When you boot your EPS, it tells you what instruments are on the disk. The display reads NO INSTRUMENTS if you don't have any, or "FILE 1 ZITHER" or whatever is the first file on the disk. You can use the Data Entry slider or the up/down arrow keys to find other instruments. You can get this menu any time you press Load:Instrument. If you've used the sequencer, you will have noticed that you can get a similar menu for sequences and songs by pressing Load:Seq/Song. All of these instruments and songs/sequences reside in what is called the "ROOT directory" - the directory of the entire disk.

There is another such menu you can pull up, it appears under Load:System. These are "lower-level" directories. You see, a directory can contain other directories. Each of those directories list more files which are only visible when you load that directory. To create a directory, press Command:System then find CREATE DIRECTORY. To "go into" a lower-level directory, load that directory. It will display only the instruments, songs, sequences, or other directories inside that one. Therefore if you then save any instruments to disk while you are "in" that directory, they will go into that directory. You can go to the next higher-level directory by pressing Load:System. You can then scroll through any lower-level directories or choose the command BACKUP TO ROOT. Pressing Enter/Yes brings up to the top-level directory again.

Tuning Systems Disk

We have seen some examples of pitch table calculations and how to file them off into libraries. Most of you out there in Hackerland are probably not sure what kinds of tuning systems to put into pitch tables and how to calculate the pitch tables based on those systems. I have a disk full of pitch table libraries and brief explanations of the theory behind them available for $10. It contains over fifty tunings on it, along with a few orchestral-instrument and analog synth sounds as well. If you want a copy, write to me at 5850 Beltline, #904; Dallas, Texas 75240. It certainly ought to keep your ears in knots for at least a month! ▬

Q - S P E C T R U M

Nothing else even comes close

KEYBOARD Magazine: "Those of you who are looking for some incredibly fresh new sounds should check out **Q-SPECTRUM**. These people **really** know how to program the ESQ-1. Presented by Patch/Works Music Software, Q-SPECTRUM **speaks for itself**. In two volumes of 80 sounds each,the library has plenty of **innovative** and extremely useful sounds. These sounds are impressively **huge and lush**.The pianos,organs,and other emulative sounds have many of the **true acoustical** features present in the real instruments. There are also **gobs** of interesting effects and synth sounds. These sounds are definitely upfront and very present -- without the ESQ cliches. It's obvious that the programmers took careful advantage of the programming capabilities of the ESQ. *If you're looking for some progressive sounds for your collection, the Q-SPECTRUM should make a great addition.*" -- Reviewed Jan.'88 (C) Reprinted with permission

If you don't have the Q-SPECTRUM™ sounds in *your* ESQ, you still haven't heard *half* of what it could *really* sound like --

Programming synthesizers is an ***ART*** as well as a science. Now you can have the same artistic edge as some of the top New York recording studios -- Patches by renowned programmer Jed Weaver. His artistic vision has created fantastic full-***SPECTRUM***™ **professional** sounds so good, you may find it hard to believe its the same instrument.

Q-SPECTRUM™ -- **For the ESQ-1/ M /SQ-80** -- Sizzling, new sounds that will take you to new heights of performance. Each 80-voice Volume is full of ***all*** types of instruments -- **acoustic *and* synthetic** -- with emphasis on keyboards. Great basses. Super strings. Real kick and snare. Fat analogs. Digital bells. And much, much more... All those sounds the critics have been ***raving*** about in reviews!

NEW PRICES!

80-voice ROM Cartridge	-- Volume 1 *or* 2	-- $39.95
80-voice RAM (E²) Cartridge	-- Volume 1 *or* 2 (programmable)	-- $64.95
160-voice ROM Cartridge	-- Contains *both* Volume 1 and 2 !	-- $74.95
160-voice RAM (E²) Cartridge	-- Volume 1 *and* 2 (programmable)	-- $124.95

Data Cassette -or- Disk (ST/Dr. T) Volume 1 or 2 -- **$28.95** **Demo tape - $5**
NEW ! Blank 80-voice RAM (E²) - **$43.95** Blank 160-voice RAM (E²) - **$84.95**
Available on SQ-80 disk (160 sounds) -- **$54.95 !**

ORDERS ONLY: (800) 77-SYNTH
Info and in NY State : (212) 873-2390
Hours M-F 10-7 Sat. 10-2

AVAILABLE AT YOUR ENSONIQ DEALER OR DIRECT FROM

To Order: Send check or money order (faster). Call for COD. Specify product/volume.Add $2.50 shipping. (Demo ppd.) Foreign orders (US$ only) add $4.50. NY State residents, add tax.Write for voice lists. ESQ/SQ80™ Ensoniq. D50™ Roland. 81Z™ Yamaha.

Patch/Works
MUSIC SOFTWARE

P.O. Box 450 Dept. TH New York, NY 10024 (212) 873-2390

Xmas Sale!

Q-Spectrum 160-vc ROM Reg.$74.95

59.95

Hey, Santa !

Dear Friends: Hopefully you've been very good this past year and Santa's leaving you something nice in your stocking. If you've been *really*, really good he might even be leaving our Q-SPECTRUM cartridge in it. But just in case there are one or two small things that might make Santa think twice, you could play it safe and take care of your own stocking. So we're being very nice to you (paying attention, Santa ?) and taking a whopping ***fifteen bucks off*** our regular price ! But hurry because this offer is ***only until Jan. 31 !*** If you've been wanting the finest sound cartridge available there will never be a better time than now. Hint -- Nonchalantly leave this ad lying about in some very conspicuous place if you'd like somebody else to get this message. (This technique always worked for us...)

N E W !

Announcing — Q-Spectrum II —

NEW! *Volumes 3 & 4 !* If you have our Q-Spectrum I(Vol. 1 & 2) sounds and like them, just wait till you hear Q-Spectrum II ! (Like the guy says, "As we got older, we got better.") You wanted more, so we went even farther into harnessing the power hidden inside your Ensoniq. The results: **160 more** of the best sounds - ***all brand new*** - you'll ever hear. And if you order now it's at the **Xmas sale price: *$59.95*** (160-vc. ROM) or you can **order both cartridges** -- that's 320 sounds total -- **for only *$114.95 !*** Hurry - offer ends 1/31.

Minotaur Studios Disks 4 and 5

Reviewed by Michael Carnes

For: Mirage, EPS.
Product: Disks 4 & 5.
Price: $20 each.
From: Minotaur Studios, 4 College St., Canton, NY 13617.

Barry Carson at Minotaur Studios has produced a set of 7 disks featuring historical instruments (well, one disk has a Farfisa and an RMI piano -- historical instruments entering a well-deserved obscurity). Disks 2 and 3 were reviewed by Persis Ensor in the November '87 issue. The next two disks came my way.

Disk 4

UPPER/LOWER 1 - DULCE MELOS. This is an early and obscure ancestor of the piano, with a single course of strings and keyboard-actuated hammer mechanism. The sound is thin and delicate, somewhere between a clavichord and a fortepiano. This particular sample covers the entire keyboard and goes just about as high as any sample I've heard on a Mirage. The program variants are basic - a bit of chorusing, more extreme filter envelopes. You wouldn't want to use this sample in an exposed situation, since there's too much hash in the decay. In other cases, it is quite usable.

UPPER/LOWER 2 - REBEC. This 3-stringed ancestor of the violin appeared throughout the mediaeval world. While less refined than the modern violin, it is quite capable of expressive playing. This sample doesn't really come to life (a problem shared by by most solo string samples, I might add). There is a pronounced bow sound on the onset of the note but it disappears almost immediately, making an effect more like a cough than a bow. Since the bow sound also tracks with the keyboard, this unfortunately doesn't bring a stringed instrument to mind. All in all, this sounds a lot more like a hurdy-gurdy than a rebec. Program 2 is nice though, making a sustained chorusy organ sound. Not a rebec, but I liked it.

UPPER/LOWER 3 - ENGLISH HAND BELLS. I was looking forward to this one, since I'm something of a bell nut. If you can put aside those awful memories of Sunday-school handbells and hear a well-rehearsed handbell group, the sonic thrill of a big set of bells will stay with you the rest of your life. Unfortunately, these bells miss the mark by a long shot. They are noisy and completely without sparkle. I consider this one unusable.

Disk 5

LOWER 1 - APPALACHIAN DULCIMER. This sample is set up for accompaniment, with each key playing root, fifth and octave. As such, it's reasonable usable. The samples don't end well, just sort of stopping instead of decaying naturally.

UPPER 1 - IRISH PIPES/TAMBOURINE. Previous to this, I had never heard a flute on the Mirage that was convincing. I still haven't. The tambourines on the top 2 keys are nice though. One is shaken and the other struck, although you'll need to retune one of them to make them sound like the same tambourine. This upper/lower combination is designed for playing together, much in the same way as the factory disk with sitar, tablas and tanpurra (just the thing when those New-Age parties get wild).

LOWER/UPPER 2 - DULCIMER II. This one is played with a plectrum and is very nice. The attack has presence and the miking of the sample was appropriate. The range of the actual instrument is much narrower than five octaves, so the sample naturally sounds stretched on the extremes. The decay is still not right, but is much less of a problem than on the other samples. This sound is in the same area as a banjo or a clavinette - more nasal than the former, less so than the latter.

LOWER/UPPER 3 - HARMONIUM. Another winner. This keyboard instrument has reeds like a harmonica or an accordion, but uses foot pedals or electric motors to generate air pressure. The sound is rich but not as overpowering as a pipe organ. The real instruments can be cantankerous and wheezy (imagine a Magnacord with emphysema), so musicians would rather use just about anything else. This gives them a nice alternative.

There has been a lot of care taken in getting good recordings for these disks. According to the notes, these were recorded at Minotaur, not from records or CDs. Most of these instruments are hard to acquire and very difficult to record well, so there was some obvious effort expended here. Unfortunately, some basic aspects of the program setup have been shortchanged. Many of the note endings are not very tidy, and there is a lot of quantization noise in some of these. To be fair, many of the noise problems are related to inherent limitations in 8-bit sampling, but I think the sounds could be quieter than this. The best samples are quite usable, but I still wouldn't use them in solo situations without some tinkering to clean them up (I believe that these are highly "tinkerable" samples). Even with these problems, these disks provide some hard-to-get sounds for special situations. Just try finding a rebec on a three-day weekend.

Bio: Michael Carnes is now working on a piece for Brass Quintet and electronic orchestra. It will be premiered at the city of Boston's First Night celebration. ▬

TECHNOSIS

FRESH SOUNDS, RIGHT NOW!

We sell the powerful contemporary sounds you demand, plus entirely new, fascinating patches, giving you the complete key to inspiration!

Try TECHNOSIS and know, satisfaction is guaranteed!

ESQ-1, SQ-80, and Kawai K-1 Patches!

☞ Demo Cassette-ESQ, SQ, and K1: $5.00pstpd.

☞ ESQ-1: Cass: $25, ROM: $35, E2: $55

☞ SQ-80: Disk: $25, W/ESQ's, $50

☞ 160V RAMs: ESQ or SQ: $85, ESQ+SQ: $105.

☞ Call for current K1 ROM and RAM prices!!!

☞ Korg M1 and Oberheim Xpander Patches...

SOON!

Include $2.50 for shipping; Cal. Rez please add tax!

TECHNOSIS

3960 Laurel Cyn. Blvd. Suite 353, Studio City, CA 91604-3791, USA. Call 213-656-3515 for Info!

Top Five Most Commonly Asked Questions About the EPS

By the ENSONIQ Customer Service and Engineering Departments

EPS User Questions

The following questions are the most commonly asked by end users. Our Customer Service Representatives (CSR) resolved these situations over the telephone daily. The hardware problems are the most commonly found by our Service Technicians.

Question: *How do I Mix a Track or a Song?*

CSR: You must use EPS OS Version 1.95 or higher, as follows:

Sequences (Tracks)
1) Set "RECORD MODE" to "ADD"
2) Select the Instrument Track
3) Press Edit then Track, scroll left to"MIX"
4) Set mix to the desired value
5) Hold Record and press Play
6) Let the Sequencer play one bank
7) Press Stop
8) Answer Yes to "KEEP=OLD - NEW"

In Song Mode
1) Chain sequences into a Song.
2) Set "RECORD MODE" to "ADD"
3) Select the Instrument Track
4) Press Edit then Track, scroll left to "MIX"
5) Hold Record and press Play
6) Mix Track through entire Song using the Data Entry Slider or the CV Pedal with PED=VOL
7) Answer Yes to "KEEP=OLD - NEW"

Question: *The EPS will not record a sequence from external sequencer in MULTI mode.*

CSR: The EPS Sequencer will only record one track at a time. The EPS sequencer will not record incoming MIDI events when the MIDI IN MODE is set to MULTI Mode. When transferring a sequence into the EPS, record one Track at a time on the EPS Base Channel. Set up each track of the sending device on a different MIDI channel. (Example: TRACK1=CHAN1; TRACK2=CHAN2; etc.) For each Track you transfer, first select the appropriate Instrument Track on the EPS, then set the EPS Base Channel to the channel of the Track you want to transfer.

Question: *How come the EPS will not let me edit converted Mirage sounds?*

CSR: WS=1 contains the actual Wavesample information for the Lower sound, WS=17 for the Upper. All other Wavesamples (30 of them) are copies of WS=1 or WS=17. Therefore, isolate WS=1 (or WS=17) as follows:

1) Create a new Instrument
2) Create a new Layer in that Instrument
3) Copy WS=1 and/or WS=17 into the new Layer
4) Edit as you wish

Question: *When appending a track using OS Version 2.2 (or higher), the display may read "TRACKS NOT TRANSFERRED." When listening to the appended version, you realize that the EPS has only transferred some tracks.*

CSR: There was not enough memory in the EPS to append all tracks. Therefore, only some of the tracks were transferred. Either edit your sounds to free up some memory or select sounds that use fewer blocks.

Question: *Why do the Roland D110 and D20 crash when played from EPS keyboard?*

CSR: Turn key pressure settings to "CHAN" or "OFF" on MIDI and each INSTRUMENT, as follows:

1) Press Edit, then Instrument
2) Scroll to "PRESSURE MODE=KEY"
3) Change it to "CHANNEL" or "OFF"
4) Press Edit, then MIDI
5) Scoll to "BASECHANNEL PRESSURE=KEY"
6) Change it to "CHANNEL" or "OFF"

EPS Operating System Changes

The following problems can be resolved with Operating System Version 1.95 AND 2.2. Remember, updating the EPS is as easy as copying a disk. End users with older Operating System disks should be referred to their local ENSONIQ Dealers for an upgrade. ENSONIQ Dealers have been authorized to copy new Operating Systems for end users who provide their own disk.

Problems Solved In Operating System 1.95

The EPS no longer crashes (display reads "ERROR 129") when selecting MIDI instruments while sequencer is playing.

Event editing works more reliably. Example of a problem: After deleting one note you realize that three notes have been deleted.

The Song Position Pointer doesn't always point to desired location.

Problems Solved In Operating System 2.2

The Sequencer tempo no longer gets erratic when appending more than twice.

The EPS no longer crashes when selecting Instrument Track location 8 button while sequencer is playing.

The Sustain pedal information is now transmitted correctly over all MIDI channels. ▬

Tips from the Headmaster

by Roy Elkin, Ensoniq

I have been an avid fan of the Hacker ever since its inception, and when I received the opportunity to write an article I could not resist. *(Ed. - Actually he resisted for about a year.)*

At the Ensoniq school we train dealers, artists, educators and others on the technical aspects of the Ensoniq line. My goal with this article is to pass along some of the techniques, shortcuts, and tricks we use to help our school attendees in learning the Ensoniq line of keyboards.

For example, if you want to load the **MIRAGE's** program variations directly, do the the following: Press Load Upper/Lower, the Bank #(1-3), the program variation number (1-4), then Enter. So if you want to load in variation 3 from

bank 2, Press Upper/Lower 23 Enter. Get the idea? I hope things like this will help.

We often talk about eye/hand coordination. Well, how about ear/hand coordination? Synthesizers are great tools for improving your ear/hand coordination. The following exercise will help train your ear to listen for an exact tone and help you learn to play with a consistent touch.

Let's start with the **SQ-80** or the **ESQ-1.** Select any sound that you have in your library. We are going to modify it a bit to work on this exercise.

Press OSC-1. Set the values on the display to the following: Top Row-OCT=0, SEMI=0, FINE=0, WAVE=SAW. Bottom Row-MODS=OFF 00 OFF 00.

Press DCA 1. Set the values on the display to the following: Top Row-LEVEL=63, OUTPUT=ON. Bottom Row-MODS=OFF 00 OFF 00.

Press Filter and set the values on the display to the following: Top Row-FREQ=127, RES=00, KYBD=00, Bottom Row-MODS=OFF 00 OFF 00.

Press the ENV 4 button. Set the values on the display to the following: Top Row-L1=63, L2=63, L3=63, LV=00, T1V=00, Bottom Row-T1=00, T2=00, T3=00, T4=00, TK=00.

Save this to memory if you like so you won't have to do this every time you do this exercise.

Now we are ready to go! Press OSC-1. Press Soft button #7. Press the down arrow 8 times. The display should read VEL. Press Soft button #8 and set this value to +05. Play a major scale. This won't sound so hot because we have Velocity modulating the Pitch (OSC1). To play a perfect major scale, each finger has to strike the key with the same velocity to play the proper pitch. It won't take too long to master this. Now increase the value of soft button #8 from +05 to +10 and try it again. As you can see it is a little harder than before. You will be surprised at how fast ear/hand coordination will improve if you do this for a few minutes each day. The highest I have heard anyone ever play a scale accurately is +30.

This exercise can also be reproduced on the **EPS** using the Oscillators, but let's approach the EPS in a slightly different fashion. We'll just concentrate on finger velocity and not the pitch.

First, you have to create a sound. The EPS has the ability to create its own waveform. Press Command. Press Instrument. Using the right arrow, scroll until the display reads CREATE NEW INSTRUMENT. Press Yes twice. The display will read COMMAND COMPLETED. Press Command. Press Layer. Using the right arrow, scroll until the display reads CREATE NEW LAYER. Press Yes. The display will read LAYER 1 CREATED. Press Command. Press Wavesample. Using the right arrow, scroll until the display reads CREATE NEW WAVESAMPLE. Press Yes. The display will read WAVESAMPLE 1 CREATED. You have just created a square wave with your EPS.

Before we move on to editing the square wave, let's name it. Press Edit. Press Instrument. Press the left arrow once. Display reads NAME=UNNAMED INST. Using the arrows, name this sound HACKER ONE. Press Edit. The display should read HACKER ON LYR=1 WS=ALL. Press Layer. Using the right arrow, scroll until the display reads LYR VEL LO=O HI=127. Underline the LO and set the value to 30. Underline the high and set the value to 90. Now try to play a scale. If you hear a blank spot, you are playing too soft or too hard. The idea is to get each finger playing with a consistent velocity. As you get better, increase the LO and decrease the HI and try again.

Well, that was a couple of things that I hope will improve your fingering. Next time I'll get a little more technical. ▬

MUG
INTERNATIONAL MIRAGE USERS GROUP

M.U.G. is the Largest/Fastest growing club in the world. As a member you will receive lists of quality user samples to purchase or trade. M.U.G. has one of the largest disk libraries, special discounts and giveaways each month ! Sound disks are only $12 each.

[___] 1 Year Membership $20 ($30 outside U.S.A.) includes 1 FREE Disk.

[___] Lifetime Membership $65 ($75 outside U.S.A.) includes 2 FREE Disks.

[___] M.U.G. Sounds Demo Cassette $10

[___] Mirage Techniques Video Cassette Volume 1
$19.95 for members $29.95 for non-members (+ $3.00 shipping)

SEND TO:

M.U.G.
G-4 Productions
P. O. Box 615
Yonkers, New York 10703
MUG Hotline 914-963-1768

NAME _____

ADRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (include area code) _____

Hackerpatch

By Sam Mims

HACKERPATCH is intended to be a place where patch vendors can show their wares and musicians can share their goodies and impress their friends. Patches designated "ESQ-1" will also work on the SQ-80. The reverse is not always true. Once something's published here, it's free for all. Please don't submit patches that you know to be minor tweaks on copyrighted commercial patches unless you have permission from the copyright owner. All submitted patches are subject to consideration for mutilation and comments by Sam Mims - our resident patch analyst. If you send in a patch, *PLEASE* include your phone number.

The Patch: CP-87

by Jed Weaver, Patch/Works

This is an all-around useful acoustic/electric "hybrid" piano with a full-sounding bottom end. Move the mod wheel a hair (about a fourth of its travel) to get rid of the chorusing for a straighter sound. Further turning of the wheel adds more chorusing. This is a sample sound from the Q-SPECTRUM collection.

The Hack

This nice piano-ish sound has many possibilities for hacking. For more of an acoustic sound, change the waveform of OSC2 to PIANO. This creates a thick and full stereo piano, much more interesting than the factory piano sounds.

On the other hand, for more of a Rhodes piano sound, go back to the original patch and change the WAVE of OSC1 to EL PNO. We can take this variation yet another step further and create a phase-shifted Rhodes sound, a la Billy Joel's "Just the Way You Are." First, set up LFO1 with FREQ=8, WAV=TRI, L1=63, and L2=63. Go to the MODES page and turn SYNC to ON. Finally, on the OSC2 page, set MOD1 to LFO1 with DEPTH=-24. This depth controls the amount of the phase shifting, with the LFO FREQ controlling the speed.

Now, from this one patch, you've gotten several very distinctive piano sounds.

The Patch: GTSYN1

by Tom McCaffrey, SoundBank

GTSYN1 is an SQ-80 sound which uses the PICK 2 wave to get an electric guitar attack, and sawtooth waves to get an analog synth decay. Try it with those Eddie Van Halen licks you've always dreamed of doing to upstage your guitarist.

The Hack

This is a difficult sound to master in performance, as the key pressure controls the pitch bend (along with the filter brightness). The full bend range is one half step. I prefer a whole step bend - and guitarists do indeed bend this much - so I changed the DEPTH of MOD2 on all three oscillators to +04. If this pressure-bending is too uncontrollable, try changing MOD2 on all three oscillators to PEDAL, and control it with your foot instead. (You do have a CV pedal, don't you?) This is necessary for converting the patch for ESQ use, unless played from an aftertouch-equipped board via MIDI. Since there is no equivalent to the PICK waveforms in the ESQ, simply turn DCA3 to OFF to complete the conversion. It won't sound quite right, but sorry, that's all she'll do.

The vibrato rate seems superhuman to me; to calm this down, I changed the FREQ of LFO1 to 24. This vibrato is controlled by the mod wheel.

The Patch: CHIMES

by Bryce Inman, Waco, TX

This is the sound of a bright, clangy bell being struck by a hard mallet. To make the sound fuller, OSC3 can be tuned to the first harmonic by changing SEMI to 07 and FINE to 02. This should not be as loud as the root, so select DCA3 and change LEVEL to 41.

The Hack

I like this sound a lot, though I did end up altering OSC1 quite a bit. Bryce uses this oscillator to generate the attack noise of the mallet. I tried all the different waveforms here; NOISE 2 gives a "spit" to the attack, while most of the others produce varying shades of duller attacks, simulating softer mallets. There's plenty of experimenting that can be done here.

I finally decided that I liked the clean bell sound best - with DCA1 turned OFF. But I can't stand to waste an oscillator, so a few minutes later, I was adding OSC1 back in to fatten up the bell sound. Try this change on Bryce's original patch: On the OSC1 page, set OCT=+4, FINE=02, WAV=BELL; on the DCA1 page, set LEVEL=63 and both MODs OFF. This creates a clear bell with tons of high-end twinkle.

The Patch: 03.BASS

by Mik Adams, Sound Logic

This is a classic roto bass sound. The mod wheel controls a medium speed vibrato, and the CV pedal controls the intensity of a slowly sweeping pan. The lower two octaves are best for bass, but the upper keyboard produces an excellent lead synthesizer sound.

The Hack

To my ears, this is more of a synth bass than a bass guitar, but I do like the sound. As Mik states, the upper octaves provide a nice lead sound as well. Both top and bottom sounds are pretty punchy, and turning on the SYNC (on the MODES page) adds even more punch.

The vibrato effect is pretty subtle. I enhanced it a bit by turning the MOD1 DEPTH up to +07 on all three oscillators. The panning effect, controlled by the pedal, is pretty subtle as well; try bumping L2 of LFO3, the panning oscillator, to 57.

To get an easy "fat Moog" sound, go to OSC3 and turn SEMI to 07 and FINE to 03, thus adding in a fifth to the harmonics. Then go to the FILTER page and play with FREQ; try it around 20 or so, and also wide open (FREQ=127).

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

ESQ-1 PROG: CP-87

BY: JED WEAVER

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	PIANO	WHEEL	1	OFF	-
OSC 2	-1	0	3	EL PNO	OFF	-	OFF	-
OSC 3	1	7	0	PIANO	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	OFF	-	OFF	-
DCA 2	63	ON	OFF	-	OFF	-
DCA 3	23	ON	ENV1	34	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	19	0	27	ENV3	43	ENV2	15

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	9	LFO2	31

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	-	-	-	-	-	-	-	-
LFO 2	11	OFF	OFF	TRI	57	1	26	OFF
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	63	0	0	63	0	0	8	0	0	1
ENV 2	63	0	0	0	0	0	0	0	0	0
ENV 3	63	30	1	41	22	0	28	47	28	15
ENV 4	63	47	0	31	27	0	41	63	28	35

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

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

SQ-80 PROG: GTSYN1

BY: TOM MCCAFFREY

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	SAW	LFO1	5	PRESS	2
OSC 2	0	0	2	SAW	LFO1	5	PRESS	2
OSC 3	0	0	0	PIC2	LFO1	5	PRESS	2

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	0	ON	ENV2	63	OFF	-
DCA 2	0	ON	ENV2	63	OFF	-
DCA 3	63	ON	ENV4	63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	17	5	0	ENV3	63	PRESS	14

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO3	51

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	44	OFF	ON	TRI	0	0	0	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	10	OFF	ON	TRI	63	0	0	PRESS

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	63	63	47	1	0	7	0	50	8L	32
ENV 3	63	63	63	1	0	0	0	0	8L	0
ENV 4	63	63	0	1	0	0	63	5	8R	0

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

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

ESQ-1 PROG: CHIMES

BY: BRYCE INMAN

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-3	0	5	NOISE3	OFF	-	OFF	-
OSC 2	1	0	0	BELL	OFF	-	OFF	-
OSC 3	1	0	3	BELL	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	0	ON	ENV1	63	ENV1	63
DCA 2	63	ON	OFF	-	OFF	-
DCA 3	52	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	86	0	48	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO1	27

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	8	OFF	OFF	TRI	63	0	63	OFF
LFO 2	2	OFF	OFF	-	-	-	-	OFF
LFO 3	3	OFF	OFF	-	-	-	-	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	31	0	0	0	0	0	8	0	0	0
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	63	52	0	34	0	0	32	44	23	11

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

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

ESQ-1 PROG: 03.BASS

BY: MIK ADAMS

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	SAW	LFO1	4	OFF	-
OSC 2	-1	0	2	SAW	LFO1	4	OFF	-
OSC 3	-1	0	5	SAW	LFO1	4	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	50	ON	VEL	13	OFF	-
DCA 2	50	ON	VEL	13	OFF	-
DCA 3	0	ON	ENV2	63	VEL	14

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	0	11	30	ENV3	35	VEL	3

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO3	43

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	26	ON	OFF	TRI	0	1	6	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	6	OFF	ON	TRI	0	1	8	PEDAL

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	63	50	45	0	50	63	20	0	0	9
ENV 3	63	34	22	0	25	63	20	8	0	9
ENV 4	63	63	63	0	63	63	0	0	0	9

	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC
MODES	OFF	OFF	OFF	6	ON	OFF	OFF	OFF

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

Classifieds

SAMPLES

High quality samples for the Mirage: Harpsichords, clavichord, viols, medieval harp, recorders, dulcimers, harmonium, strings, brass, flute, handbells, organs, vielle, lute, many more. $20.00 each. $110 for a set of 8. Barry Carson, Minotaur Studios, 4 College St., Canton, NY 13617.

EPS SAMPLES: Over 250 new disks. Everything from Moog to Synclavier. Send $1 for listing. SCANDINAVIAN SAMPLING TECH, Gastkullev 13, 83005 Jarpen, Sweden.

SAMPLING CD'S. Earworks exotic percussion $30, McGill Winds and brass $45, DR. T KCS $65, Echoplus $30, Sonus FB01 Design $35. 201-736-7160.

EPS Samples. D-50, Moog, Kurzweil, piano, drums, etc. You configure your own disks from my sound list. Each disk $9.95. Send SASE to J.D.W. 715-E Main St., Albertville, AL 35950.

EPS Disks - Will trade or buy. Have large selection, but interested in more, particularly vocals. Also will accept/trade in Sound Designer format for the Macintosh. John Emerson, 101 Brickett's Mill, Hampstead, NH 03841. 603-329-6792.

D-50 sounds for your **MIRAGE** and **EPS** samplers. We sampled 64 great D-50 sounds. 10 disk set, $69.95 U.S. And now, introducing **MIDI TEXTURES;** a combination of Kurzweil modules, Korg M-1, D-50's and DX7. Incredible MIDI sounds including D. Foster piano, rich strings, great bells, hot brass and sounds you've only been dreaming of. 6 disk set, for the Mirage and EPS, only $59.95 U.S. EPS samples were made on the EPS. Order now, M.O. only, or send $8.00 for demo cassette (or disk) and sound list. PSL Productions, P.O. Box 602, Station K, Montreal, QUE, Canada, H1N 3R2.

EPS, DSK, Mirage samples. Also custom services. Every sound you need. 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.

New stuff from "the Lush"! My "DeMiTy," "X," and "Lush" disks for Soundprocess and your Mirage - only $25 each. Over 100 sounds on each disk! Also, my library of samples for the EPS: D-50, TX81Z, acoustic instruments. Send for my list. Bob Spencer, #11 Warren Dr., Granite Falls, NC 28630.

EQUIPMENT

Will trade EPS with 2X expander for ESQ-M, Mirage rackmount with Megabank, MME, or Triton Soundprocess Disk, TX-7 module and WX-7 wind synthesizer. Will consider EPS trade for ESQ-M, TX-7, D-550. Will also consider EPS for Kurzweil 1000. 203-564-8284 after 4 pm.

ESQ-1, expander, cover, thousands of voices (originals, not copies) on ROM cartridges and cassettes - $900. Prophet-600 (arpeggiation!), cover, 600 voices - $550. TEAC 10" tape deck, stereo, bi-directional record - $600. Everything mint, all documentation and manuals. Prepaid insured UPS shipping in original cartons. Bert, (904) 398-6888, pm before 8 Eastern and weekends.

SUPER HEAVY DUTY STEEL RACK excellent for all rack mountable modules, 39 rack spaces, 6 ft. H by 21 in. W by 21 in D. $59.00 + FRT. ENSONIQ ESQ-1 Mint Condition! 2,300 Patches + Sequencer Expander only $895.00. LEAPING LIZARDS (IGUANA) $20.00. ORBITAL ACTION MUSIC, P.O. 55191, GRAND JUNCTION, CO 81505. 303-245-7639.

SOFTWARE

C-64 Software. Dr. T's VDS for Mirage $50. CZ Patch $30. FB-01/DX100 Editor $40. Convertifile Plus $20. Passport Music Shop $60. Caged Artist CZ Rider $30. John Wenberg, P.O. Box 561, West Dennis, MA 02670. 508-398-3990 after 6 EST.

MSCI - IBM VES for Mirage and MPU-401. Reviewed in Issue #38 of TH. Program: $55.00, Demo: $10.00. Add $5 S/H. Send check to: Jeffrey Richter/Donna Murray, 3502 Village Bridge Apts, Lindenwold, NJ 08021. Phone: 609-346-0943.

WANTED

Feedback on what a "Soundprocess" editor should look like, what computer you would want it to run on, and how much you would pay for one. Interested parties should call 813-371-8441 and leave your comments or leave a message on BBS "NEXUS (813-378-1812). Cutoff date is Jan. 31st, 1989.

New York City based Music Software company seeks experienced programmers. We are looking for congenial and creative people who enjoy working on challenging projects. The following positions are available immediately: (1) Programmer well versed in C, MSDOS & MS Windows. (2) Programmer with experience in Database/8086 Assembly language. Please send resume to: 55 W 16th St, #3, New York, NY 10011.

Used (but not abused) Macintosh computer. A "512KE" or "Macplus" would be splended! Contact: Greg Brettell, 1826 E Indionola, Phoenix, AZ 85016, 602-274-8049.

PATCHES

You can now own the world-famous PATCHMAN MUSIC ESQ-1 Patches for only $10/volume!!! Highest quality. Volumes I-IV: 40 patches/volume. Cassette. Application tips with each volume. Specify instrument, Volume, format. PATCHMAN MUSIC, 2043 Mars Ave., Lakewood, OH 44107.

SOUND LOGIC ESQ-1/SQ-80 "Modular Voice System". 120 Stereo Voices - 80 Fundamental and 40 Unique. Extensive implementation of CV Pedal and Poly-pressure. 64-page Owner's Manual with program sheets and performance notes. SysEx, Mirage disk and all other standard formats supported. $39.95. FREE Shipping & Handling. For brochure or to order: SOUND LOGIC, 1125 Eleventh Street, Ramona, CA 92065. 619-789-6558.

SEQUENCES

For the ESQ1 with expanded memory: classical music sequences for organ and piano scores, including patches for the proper sounds. 10 volumes available. Supplied on high quality data cassette and individually made at $14.95 each or audio cassette at $6.00 each, plus $2.00 S/H. Send for free list. Newest volume - The Piano Music of Scott Joplin. Don Pribble, 6810 Hwy 55, Minneapolis, MN 55427.

OUT-OF-PRINT BACK ISSUES

M.U.G. will provide Out-of-Print issues for cost of materials and postage. M.U.G. Hotline: 914-963-1768 or write: G-4 Productions, 622 Odell Ave., Yonkers, NY 10710.

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

I would be happy to accomodate requests for copies of no longer available back issues of the Hacker. 5 cents per page plus postage. Pat Finnigan, 4817 E 17th St., Indianapolis, IN 46218. 317-357-3225.

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

FREE CLASSIFIEDS!

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

CYBERSONIQ

THE SYNTHESIZER COLLECTION

Volumes 1 and 2 provide Mirage users a variety of clean, easily accessible synth samples that combine the power of sampling with 48 advanced wavetables created with Crosswave, FM, Analog, and Additive Synthesis.

Both Vol. 1/2 include 48 user selectable glitch free wavetables, 2 disks (whole/splits), manual, 192 patch presets, patch card and S/H.

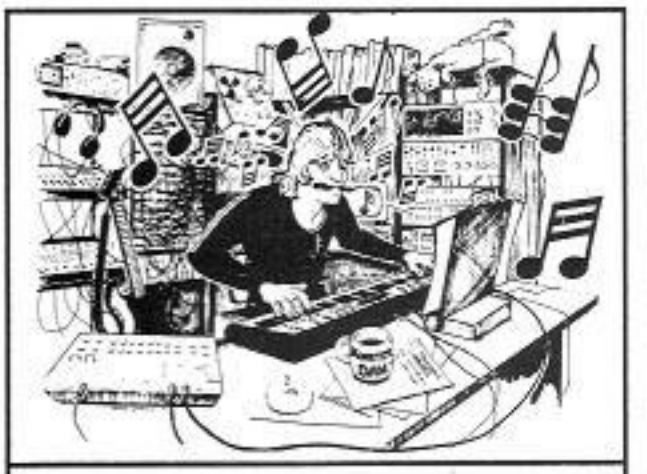
Compatible with all Mirage O.S.

Vol.1 $32.95, Vol.2 $39.95
Limited Special-Vol.1/2 $64.95
NYS Residents add 8.25% tax

See review in this issue!

CYBERSONIQ
PO Box 1771, Madison Square Station, NY, NY 10159

Mirage & EPS are both trademarks of Ensoniq Corp.



MONSTER DAN is still surviving sequencing madness, and now

HUNDREDS of Top 40

sequences for ESQ-1* or SQ-80* are available. Get sequences, patches, drum patterns, and programmed mix for all the songs you need to keep your act current.

SUBSCRIPTION DISCOUNTS are now happening! For more info., catalog listings, and order forms **call any time 24** hrs. a day, or write

DANLAR MUSIC
PO Box 973
Tualatin, OR 97062 USA
(503) 692-3663

ESQ-1 and SQ-80 are trademarks of ENSONIQ CORP.

Cesium Sound

The Definitive SQ-80 Library

40 Voice Volumes on disk
also available on cartridges

1. Keyboards
2. Guitars and Basses
3. Synths and Techno
4. Drums
5. Pitched Percussion
6. New Age
7. Space
8. Bells and Voices
9. Harps and Strings
10. Brass and Woodwinds

one	two	four	ten
$12.00	$20.00	$30.00	$60.00

All 1200 ESQ-1 and SQ-80 sounds $120.00
SQ-80 demo cassette $5.00, list with descriptions $1.00

D-50 Sounds on ROMs, RAMs, and data disks

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

	one	two	four
ROM cards	$50.00	$90.00	$160.00

RAM cards $80.00 each, with any volume

Your RAM card filled $25.00

All four volumes on data disk for these librarians: $80.00
Dr. T's ST, Opcode, Prolib, Patchmaster+
Other librarians call or write for assistance.

Demo casette $5.00, sound list with descriptions, $1.00

TX81Z Sounds on Cassette

6 volumes (192 sounds) $30.00

Demo cassette and list $5.00

The Premier ESQ-1 Library

expanded, upgraded, also compatible with SQ-80

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

160 voice programmable cartridges with any four volumes $90.00

80 voice programmable cartridges with any two volumes $50.00

	each	four	ten
80 voice non-erasable cartridges A-J	$30	$100	$200

40 voice volumes on data cassette, Mirage diskette, or SQ-80 diskette $10.00 each

Half Price Special! All 800 Sounds $100.00
on data cassette, Mirage diskette, SQ-80 diskette, or data disk for the following librarians: ESQ-apade, Blank, Opcode, Prolib, Patchmaster+. Other librarians call or write for assistance.

Demo cassette $5.00, sound list with descriptions $1.50.
Manual explaining the options in this ad, $1.50.

Please include $2.50 for shipping, CA residents add sales tax. Send check, MO, or call.

Cesium Sound, 1640 Walnut St. #C, Berkeley, CA 94709 (415) 548-6193

VISA MasterCard

ESQ-apade is a trademark of Dr. T's Music Software. Opcode is a trademark of Opcode Systems. Blank is a trademark of Blank Software. D-50 is a trademark of RolandCorp. TX81Z is a trademark of Yamaha International Corp. ESQ-1, Mirage, SQ-80, and Ensoniq are trademarks of Ensoniq Corp. Prolib is a trademark of Club MIDI Software. Patchmaster is a trademark of Voyetra Technologies.

The Interface

Letters for The Interface may be sent to any of the following addresses:
U.S. Mail - The Interface, Transoniq Hacker, 1402 SW Upland Dr., Portland, OR 97221
Electronic mail - GEnie Network: TRANSONIQ, CompuServe: 73260,3353, or PAN: TRANSONIQ.
This is probably one of the most open forums in the music industry. Letter writers are asked to please keep the vitriol to a minimum. Readers are reminded to take everything with a grain of salt.

Dear Sirs,

I have spent several days reading back issues of your magazine and offer the following perspicacious comments:

1. The radioactive banners are fantastic. I find I can shut the lights and read in the glow of several magazines spread out on the kitchen table. For reading in bed, not so good. The glow prevents my wife from falling asleep. We've compromised by my storing the magazine under the pillow as I fall asleep. My kids claim they can now detect a faint aura about my head. However, the Hacker has cured my insomnia completely. Worth every cent!

2. You guys aren't familiar with People or US magazine. The American public demands pages of flashy pics of good looking folks. No wonder your writers have to write informative and useful articles.

3. What happened to the gals? Haven't noticed any writers of the female persuasion.

4. Spelling and grammar ain't TH's strong point.

5. I rate musicians much more highly after subscribing to the Hacker. My image of folks in the music business as being flakier than snow has been converted to an image of intelligent, hard working, impoverished flakes. Besides, a group of people who complain as much as TH readers do can't be all bad!

6. TH does a good job of conveying the fun of hacking and music.

7. Ensoniq maintains the posture of a benevolent but arrogant despot.

8. By the laws of MIDIland, voiding your manufacturer's warranty is punishable by not receiving your factory authorized upgrade to fix bugs purposely planted by the conniving marketing department to coerce customers to perform an unnatural act. It seems that TH readers do not readily succumb to the ruses of the marketing moguls.

Now, as to where I can contribute my 2 cents to the general good - I hear two messages coming through from letter writers and reviewers:

1. Ensoniq documentation could use improvement.

2. Wouldn't it be nice if we could add more waveforms to the ESQ-1 or add this gizmo to that whosiwhatsit?

I would like to address both of these issues with some humble suggestions by pointing out that the MIDI industry (Ensoniq included) is where the computer industry was 20 years ago. This means that the pioneers to emerge from the stone ages will shape a new era.

Specifically, Ensoniq documentation is poor. It's good at telling me how to press a button and where the button is located, but it doesn't even begin to tell me how to do what I want to do, for instance, create a drum sound. The documentation doesn't address the reasons why I bought the machine.

That's no surprise, since Ensoniq advertising isn't effective either in the same way. The reason I bought an Ensoniq product is sheer coincidence. It was the first synthesizer demoed to me by a music store salesman who took me seriously. I then went to a whole bunch of stores in Israel, NY, and Silicon Valley, and no salesman seriously attempted to demo or sell me any other keyboard. Being a working type, I wanted the best product around. No salesman was able to convincingly show me why an SQ-80, Mirage, EPS, or anything else was superior. As a matter fact, I am still convinced that the EPS is a step backward because it's got a smaller display than the ESQ-1. If Ensoniq can't understand that the human-machine interface (both visual display and aural output) is the most important factor in the advance of technology today, then they'll figure it out the hard way tomorrow>

People buy Ensoniq's products because they fulfill a need. They might try a model with designer stripes and quintuple the price, which they could then sell as a status symbol. If I have trouble using the product because of inadequate manuals, confusing terminology, a pathetic display, I'm not going to recommend it to my friends, etc. I'm trying to teach my wife and kids to use it. It isn't all that easy. You have to be really devoted to get the hang of it. Or lacking devotion, be willing to read TH.

Next, adding gizmos to Ensoniq's whatevers can indeed cause no end of trouble and expense to Ensoniq and its customers. However, there is a solution. It was invented by the computer industry and it goes under the general name of architecture, standards, and interfaces. Too late for the EPS and the SQ-80. But some company is going to be smart enough to apply these principles to the next generation of MIDI equipment.

For those of you without the background, let me briefly sketch the MIDI instrument of the 90's. Start out with a data bus within a case and define modular components that interface to the bus. Modular components include keyboard, disk drive, display interface, audio interface, MIDI interface, waveform generator, RAM memory, guitar strings, flute mouthpiece, cartridge, etc. Everything interfaces to a bus in a modular fashion.

Based on this architecture, the SQ-90 is a family of machines, rather than a puny, one-model Ensoniq flagship. Willingly, nay enthusiastically, you pay more for the modular design because:

1. You can tailor the unit to your needs.

2. You can upgrade for the cost of a module when Ensoniq introduces the new superduper waveform generator that includes a circular waveform.

3. You can benefit from Leaping Lizards third-party new OS that lets you place harmonic orders with your broker as you tickle the ivories.

As far as the EPS is concerned, it too benefits because it's a modular cousin of the SQ-80. It shares the same bus, family of displays, disks, waveforms, etc. You can convert from an SQ-90 to the new EPS with the change of a module or two. Rack mount? No problem, just skip the keyboard module. Need more voices? Add more waveform generators and RAM. Keyboard? Choose from the 2, 3, or 6 octave models with or without the polytouch foreplay feature. Everything priced according to function and need. You pays your money, you gets what you want. Ensoniq can't or won't pander to your particular whims? Well, Dick Lord's brother-in-law's nephew will because the modular standards allow him to invest his time and energy in order to make a product with an existing and defined marketplace.

Overall, the customer gets a better product, larger product selection, a growth path as his finances and sophistication grow, and a reprieve from product obsolescence. Ensoniq profits zoom because of lower manufacturing costs, higher prices, bigger volume, and expanded market penetration and definition. The packaging technologies exist today. It's a great leap forward that just needs to be taken.

Now that I've solved the problems of the world, let's get back to the problems I can't solve. I bought an ESQ-1, Cakewalk, and a CMS MIDI interface card. I would like to get in contact with reader Rick Jenson (TH, Vol 37) and get some help on transfer of SYSEX commands with Cakewalk. By the way, I have release 2 of Cakewalk. Needs to be debugged! I usually manage to crash it about twice a session. It's a good program, just needs to be debugged.

I run my ESQ-1 through a transformer. When I plug a PC in on the same circuit, the ESQ-1 starts flickering and then has to be reinitialized. Any ideas? Also, shouldn't the BASIC patch be on the internal PROM? When I reinitialized, it wasn't there. I finally found something called BASIC on the external cartridge. I managed to confuse the ESQ-1 the other night to the point where the only thing to be done was reinitialize. It doesn't speak well for the level of s/w sophistication within the unit if I can't salvage anything within the memory. It's a fun machine, just needs some professional development to make it reliable. ("Ensoniq's" response: There's a tradeoff between reliability and cost. Our customers prefer cheaper and less reliable!)

Are there any other subscribers in Israel or are we the same league as Saudi Arabia? If there are, I would like to get in touch for mutual support. By the way, what is the total circulation of TH?

Keep up the good work. And avoid the interior decorating business!

Benny Lebovits
Jerusalem. Israel

[TH - It's a fact that we don't like to talk about much, but we have to occasionaly insert some questionable spelling and grammer in order to maintain our "hacker" image. We also have a token female editor. Total circulation varies with how many we send to Ensoniq to ship with instruments. We've got a little less than 4000 subscribers.]

[Ensoniq's response - We don't mean to sound arrogant, but it is often necessary to remind people that we are a small company with limited resources (especially compared to our competitors) and are simply not in a position to respond to every suggestion and query that we receive.

We do pay attention to our customers and many suggestions are incorporated into present and future products (for example a lot of the sequencer features on the EPS, and a headphone output on the EPS and SQ-80). Although we try continually to improve our products where feasible, we don't have the resources to continuously re-engineer old products and work on new products as well.

Our documentation is written to address the majority of our customers, many of whom are not interested in the technical aspects of the equipment. Documentation is a major support activity which consumes a great deal of resources. We recognize our obligation to provide complete documentation, and this often takes time.

You will be hard-pressed to find any manual from any manufacturer which covers the subjects you describe. Creating sounds is as much an art as a science. Just as the manual for a word processor cannot tell you how to write a best selling novel, it is not realistic to expect the manuals for this kind of equipment to tell you everything you need to know to create great sounds.

For anyone who needs the basics explained, or for those who just want to read up on subjects related to the use of a particular instrument, there are numerous books available at music stores, as well as articles and advertisements in the major music magazines, including of course the Transoniq Hacker. These magazines can cover those subjects far better than we could in the limited space and time available for a product manual.

We have had very little negative response to the display on the EPS because a lot of effort was put into making the EPS easy to use in its primary activity: making music. Although it may be slightly less intuitive to use more esoteric functions, the EPS is very easy to use as a musical instrument.

The principles that you described about developing standards for the next generation of MIDI equipment is an ideal system and may someday be available at the high-end of the market, but the analogy between the personal computer industry and the professional keyboard industry doesn't really hold up that well.

The volume and profits in the music industry are a tiny fraction of the computer industry and the market is far more specialized. There is little justification for the development effort and cost overhead of such a system when volumes are this low. It is perhaps enlightening to consider a statement made by an industry expert who described the professional keyboard market as somewhat smaller than one average supermarket.

We recommend that you don't plug any musical equipment into the same circuit as a computer, or at least use a line filter. The BASIC patch is included on the cartridge that comes with the ESQ-1. The ESQ-1 is currently at OS 3.5 (see last month's article about ESQ-1 updates). As with any software-based product, we offer periodic upgrades to improve the product.]

Dear Hacker,

I have a question that maybe you or one of your readers can answer for me. I have an ESQ-1 with version 2.0 software and I want to upgrade to the 3.5 software. I also have Blank Software's Sound File, sound/sequence librarian for the Commodore 64. Other than a few occasional glitches and shortcomings this program suits my needs fine. What I need to know is if the ESQ 3.5 upgrade and the 1.0 version of Sound File are compatible.

Thanks for creating an honest, productive, and objective forum that works for us "consumers" and Ensoniq too.

Ross McCort
St. Petersburg, Florida

[Ensoniq's response - We know that version works on the Macintosh, but we're not sure about the Commodore. You may need to contact Blank Software on that one.]

Dear Sir/Madam,

A suggestion for Ensoniq. Maybe I'm just "spoilt," but I've owned an ESQ-M for 6 months and have enjoyed turning it on and all the presets, MIDI channels etc. are all as I'd left them when I switched it off, hence I just load my sequencer with a song and just press play. Unfortunately, with my new EPS since you're loading in the system software at the start, all presets have to be set again. So my suggestion is to insert a little program on the system disk which can, if required, record the "setup" and automatically load it with the system program. With this solution you would only have to re-setup your parameters with each new system software edition. I have a fair bit of equipment and cannot use defaults.

If there already is a means of achieving the above desire, please let me know.

Regards/Potentially peeved off,
Nevan McLeay
New Zealand

[Ensoniq's response - This can already be done using the "SAVE GLOBAL PARAMETERS" Command (see page 49 of the Musicians' Manual).]

Dear Hacker,

Here's my check for a third year of your great magazine. And after all this time, I still keep discovering new things about my ESQ-1 and SQ-80. Let me share one that I don't believe is common knowledge (yet).

Ensoniq doesn't include a transpose function for the straight synth (we should all transpose as we play, right?). So someone wrote up a way of pitch-bending while connecting the MIDI Out to the MIDI In and then removing the MIDI connection, leaving the "eSQ-n" "bent". This worked until you bumped the pitch bend wheel, and then you had to start hooking up cables again. I could never remember the correct sequence nor did I want to be messing with the cables. Well, there is another way!

To transpose, press the COMPARE button while holding down the RECORD button to get to the (not so) secret Analog Tests page. Then move the pitch bend wheel to its limit of travel, either UP (to transpose down), or DOWN (to

DISAPPOINTED IN CHEAP MAIL-ORDER DRUM SAMPLES? ME TOO.

Get great drum samples for the Mirage.

Disc #1 includes:

BANK 1 (Rock Drums): Kick, Snare, Hats and Shakers (at two separate volumes), Ride and Crash Cymbals.

BANK 2 (R&B Drums): Kick, Snare, Hats and Shakers (at two separate volumes), Toms, Clav, Tambourine, Bell, Hand Claps, Finger Snaps, and Crash Cymbal.

BANK 3 (Latin Percussion): Kick Drum, Congas, Shaker, Scrapers, Maracas, etc.

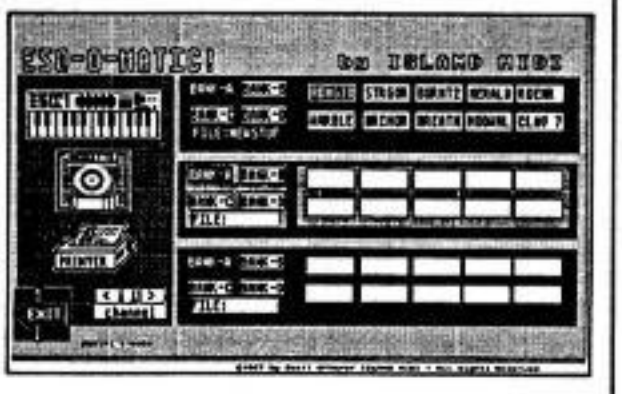
Send $12.95 to:

NORIA PRODUCTIONS
6951 Warner Ave., Ste. #370
Huntington Beach, CA 92647

Please add $2 for Shipping and Handling.

ESQ–O–MATIC!!

ESQ'1/M Patch/Sequence Librarian
by ISLAND MIDI for Atari ST



- Includes 40 Original Patches (Vol.I)
- Prints patch sheets, directories
- Saves/loads full & single sequences
- Stores 3000+ patches on SS diskette
- NOW WITH FULL SQ–80 SUPPORT

• $39.95

"I would like to go on record as 'raving' about this product"
-Rick Hall, TRANSONIQ HACKER

ISLAND MIDI PATCHES (cass): Vol.I $16.95, Vol.II (new) $16.95, Both $30.00

ISLAND MIDI, P.O. Box 1102
Bayshore NY 11706
(516) 666–4167 (orders add $2.50 P&H)

transpose up), and press "READ" (soft button 10). Now let go of the pitch bend wheel.

To select the amount of transpose, go to the Master page and select Bend-range, then put in a value for the number of semitones.

To return to normal operation, just call up the Analog Tests page again (it automatically recalibrates the pitch bend to center again). The transpose is also reset when the unit is powered off or reset.

The folks at Ensoniq probably didn't tell us about this because of the limitations. For example, the pitch bend wheel remains active, but only bends in one direction (toward the untransposed frequency). Going the other way causes a sudden jump to twice the amount of transpose. Also, when selecting or deselecting a track, the synth goes back to untransposed mode until the pitch bend wheel is moved, and then jumps to the transposed setting. (Note that a sequence will play untransposed while the live keyboard plays transposed.) And finally, the synth isn't really transposing anyway; it's doing a pitch bend. This means that the patch will take on a different texture, since different notes aren't being selected and the oscillators and filter are operating outside of their normal frequency ranges.

There is a way to keep an ability to pitch bend both ways (by not moving the pitch bend wheel to its limit), but it only works with patches that sound ok with a little random vibrato.

By the way, why do the controllers (mod wheel, pedal, etc.) only take effect after they are moved on a patch or track? For example, if I want to record a track with the wheel at 1/3 position, I have to record moving it there at the beginning of the track. It's pretty hard to move it to position and play the first note on the downbeat. Shouldn't the current position of the controllers be recorded at the beginning of the track (regardless of whether an interrupt occurs to indicate movement)?

Sincerely,
John Varga
Boulder, Colorado

[Ensoniq's response - A software filter is used to prevent controller information from being recorded unless there is a change. If the controller information was recorded continuously, the sequencer memory would be used up very quickly.

You can record a separate track with controller changes, then merge the two tracks. It's not the most convenient way, but it can be done.]

To the TH Interface:

I have some hard disk questions for the EPS:

Will Ensoniq publish a list of tried and proven hard disks for the EPS (or will the list given by Craig Anderton in issue #40 of TH get occasionally updated by TH)? Does the maximum allowable number of daisy-chained SCSI devices (seven, I believe) apply to combinations of hard disks and EPS's (as long as every device has a different address of course)? For example, can two or three EPS's access the same hard disk (or two)? Are there any future plans for sampling direct-to-hard disk? Is the EPS hardware capable in this respect?

As a new member of the Ensoniq user family, I congratulate Ensoniq for their truly impressive EPS and you for this excellent publication; keep up the fantastic work, everybody!

Sincerely,
John Lambrou
Palatine, IL

[TH - We're going to try to stay on top of this SCSI thing. There should be future articles on it and all sorts of info on what works and what doesn't. There's a list elsewhere in this issue on approved drives.]

[Ensoniq's response - The SCSI manual includes a list of tested drives, and this will be updated whenever we are able to test new drives. We have recently provided a list to the Hacker, and you should be on the lookout in the near future for a new article on SCSI which will include a more up-to-date listing.

The EPS has a fixed SCSI ID so you can attach multiple EPS's without using up multiple ID's. However, if at any time more than one EPS tries to access the SCSI bus simultaneously there will be major problems. There are no plans for sampling to disk.]

Dear Ensoniq,

I have just purchased an EPS after waiting in anticipation for over a year. What should I find but that it is actually incomplete without the 4x expander. How I want to know how long I will have to wait for it? I cannot help suspecting that you are trying to clean up on 2x expanders which will become useless when the 4x expander is available. Otherwise what could possibly by the reason for your shameless delay on making the 4x expander available? Come on Ensoniq complete the EPS without delay! We need it to save the world.

Sincerely,
Martin Cockeram
Hilo, Hawaii

[TH - Actually, Ensoniq's dealing with the problems caused by the (government-mandated) memory shortage hasn't been all that bad. It's too bad about the 4x, but on the other hand, most people are finding the 2x to be handier than they thought it would be. Making SCSI available on the 2x was also a nice touch. Anyway, the third-party market responds once again - see Hypersoniq.]

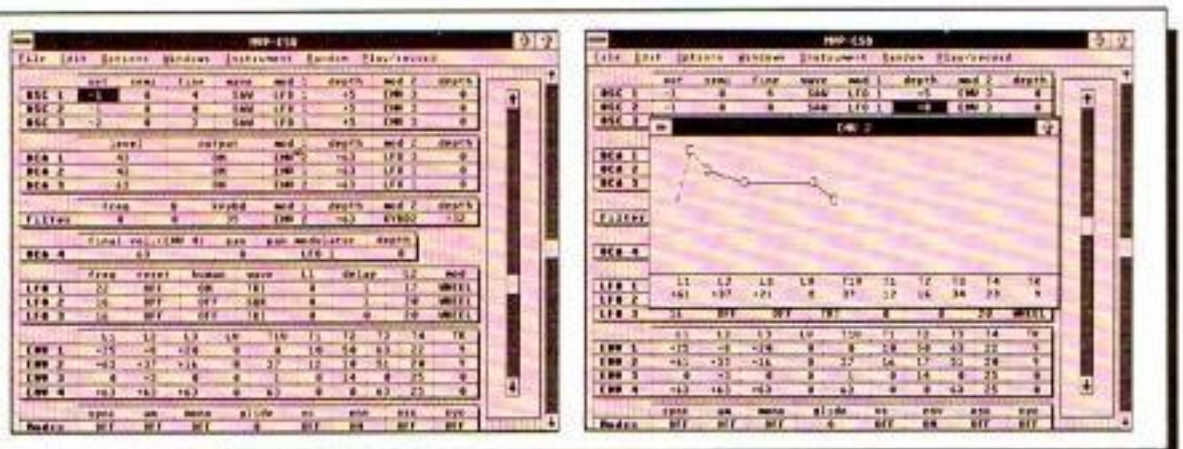
[Ensoniq's response - The decision to hold off on the 4X expander was not a ploy, nor were we very happy about making that decision. Unfortunately, we didn't realize how severe the memory shortage was until the 4X expander was already advertised.

At the present time, we can't get the 1 Meg memory chips needed for our 4X expander. We expect to be able to get these chips soon, but they will be considerably more expensive than we originally expected.

The EPS is quite capable without any expanders. Most people find a system with a 2X expander sufficient; in fact, few samplers offer more memory than an EPS with a 2X expander.]

Dear TH:

I'd like to respond to a number of letters from the October 1988 issue. I also have some general comments to make. It's a lot, so I'll try to be brief.



MVP-™ESQ and Microsoft®Windows®

with an IBM® PC/XT/AT or Yamaha® C1 is the easy way to manage your Ensoniq® ESQ-1™, ESQ-M™, or SQ-80™ with features like:

- Familiar patch sheet or flowchart style voice editing
- Graphic envelope editing in popup window for easy envelope changes
- Intelligent random patch generator with voice interpolation
- Edit up to eight banks or master libraries with patch descriptions
- Control panel to press synth buttons remotely

MVP-ESQ requires a PC running Microsoft Windows 2.0 or greater, a MIDI interface, and a mouse. A hard drive is highly recommended. The retail price is $119.95. Demo disk $5. MC/Visa/COD/Check.

Playroom Software

7308-C East Independence Blvd., Suite 310
Charlotte, NC 28212 (704) 536-3093

Trademarks and Registered Trademarks: MVP-: Playroom Software; Ensoniq, ESQ-1, ESQ-M, SQ-80: Ensoniq Corporation; Yamaha: Yamaha Music Corporation; Microsoft, Windows: Microsoft Corporation; IBM: International Business Machines Corportation

Regarding Greg Weber's delays between sequences: I experienced the same problem, especially when going, for example, from verse to chorus with a drum fill lead-in. I was certain there was a delay, but then began to suspect another problem: my own sense of time. Having worked with the SQ-80 sequencer for a while, I had quickly learned that my timing, although good, was not perfect like I thought it was. To check this theory, I ran a sequence, which I knew to have the "delay", with the click track on, then about one measure before the step, turned the volume down: the click proceeded perfectly to the next sequence without delay. Doing it again with the music, the "delay" was there. I think we have a tendency to anticipate lead-ins, especially where fills are involved. And my guess is that many listeners do, too. So, we have to "help" ourselves and them hear it "perfect". I have found it helps to play very simple drum fills which I am sure can be quantized to lead in properly. Sustaining chords, for example on the electric piano track, also help to minimize any gaps which should give the listener an opportunity to hear ahead.

Regarding David Corley's four keys with the pronounced click: Ensoniq's response does not address this complaint. We all know about the positive stop pad and the clacking noise it makes, and we all accepted it before we bought the board. What Corley is saying, and what I have also experienced with my SQ-80, is that there are about 4 particular keys (in my case, mostly black ones) that "click" instead of "clack". Rather than sounding like they're bottoming out on a felt pad, they sound like they're hitting metal. They also seem to feel different, although this could be a psychological side effect of the noise. This is not your ordinary bottoming-out-on-aftertouch-stop-pad noise. What is it?

Regarding Pierre Kubage's hum when connected to his Peavey amp: I noticed the same thing with my SQ-80 when connected to my (interestingly) Peavey amp. The hum is pitched at around a Bb, which I think makes it a multiple of 60 Hz. I took the unit to my dealer and (naturally) the hum was barely noticeable. I also checked their demo and it was the same. Of course, when I got it home, it was noticeable again. I did however, notice that the volume of the hum varied depending on which outlet in the house I was plugged into, so I'm chalking it up to wiring variations.

I have also found that my SQ-80 has a way of making some rather impolite noises on certain patches. There is a lot of crackling distortion in some ranges of the piano patches, and the string programs, especially "FIDDL2" and "CELLO" are extremely weird. For example, at B3 (FIDDL2) and B4 (CELLO) - same octave - I get this bizarre hum and cutting out like phase cancellation when waves overlap. I called Ensoniq and they said that it was related to the split-points of the multi-sampled sounds, that it depended on who at Ensoniq did the programming, and that it could be programmed out. Unfortunately, I was not then, nor am I now, extremely interested in or adept at programming, especially programming out factory-produced crud. Furthermore, I do not understand how, if it is sampled, it can be programmed out. Right now I just try to avoid bad patches and notes, and remain on the lookout for clean string patches. (NOTE: After drafting this letter, I went home, found my mail, and read Charles Butler's letter in the 11/88 TH Interface. Here's another one, Chuck. And I did call Ensoniq about it. I have an idea: If it's a programming thing, why doesn't Ensoniq fix it and send us new disks?)

One other idiosyncrasy I have found is that when recording over tracks with the sustain pedal, the first measure often plays back without any sustain. I re-record several times, making sure I press down hard on the sustain pedal. This sometimes works, but I often have to clear the track and start over. This does not happen that often and I can deal with it. But I do not understand it. One thing I have learned (I think) is that notes and sustain are treated as separate commands by the sequencer. I found this out when I went to record over a section that I had previously recorded with sustain. I wanted to play different notes and play without sustain. Changing the notes was no problem, but all the notes came out with the sustain still there. I just wiped the track clean and started over. Could you explain this?

Now that I've said all that, let me make it clear that, in spite of all of the above, I remain supremely impressed with the SQ-80. I am a father/homeowner/ part-time-musician-on-a-budget, and I spent months researching synths, sequencers, etc., before deciding on the SQ-80. Except for the above gripes, it is everything I wanted and more. I have not even gotten into half of the things it can do and already feel like I got my money's worth. I almost bought a D-20, sight unseen, but I needed a unit right away at the time and could not wait for a D-20 demo to come in. After reading EM's article this month, I am even more glad I made the choice I did. Moreover, I seem to have received a software update. Everything I've read says the sequencer memory in the SQ-80 is 20,000 notes. Last week I cleared my sequencer memory and it told me there over 65,000 free. Is this the whole disk drive memory, or did I get a super sequencer?

One final thing I'd like to throw out: to catalog my disks and the data on them, I have made up several forms on my computer. I use them a great deal to move programs around and keep track of songs and sequences. I was thinking that if enough people were interested in having forms such as these, I would make up offset-printed masters. For a small fee, anyone could get a set and copy to their heart's content.

In closing, I look forward to receiving TH each month and especially enjoy the Interface. I haven't seen that much on the SQ-80, though. The EPS is getting a lot of attention (well deserved - I heard one) and many patches are for ESQ-1/SQ-80. I think this is a great board! Full of surprises, and not just an inflated ESQ-1. Let's hear from those SQ-80 owners out there! I'm not much into programming, but do a lot of sequencing. I might be talked into trading sequences for patches. Anyway, TH is a nice support for us Ensoniq owners/users. Thanks for the valuable information.

Sincerely,
John R. Bolles
34 Buckwalter Rd.
Royersford, PA

[Ensoniq's response - Due to the differences in the frame structure of the keyboard, different keys can produce different sounds. The only metal involved is the sensor plate

THE MUSICAL EPS!

Introducing the #1 sounds for the #1 sampler—
—the KEEL *EPS Sound Library*

More than just a sample.

Every KEEL EPS instrument begins with a set of the sharpest, cleanest samples you'll ever hear. Direct to the input of the EPS. **Not retreads** from another machine, like some of our competitors.

But that's only the beginning. Next comes loop smoothing, EQ, and other digital signal processing, via state-of-the-art computer software like **Turbosynth™, Alchemy™,** and **Sound Designer™.**

Finally comes the programming. Every parameter, layer, and patch variation painstakingly tweaked to get the most out of the powerful EPS architecture.

The end result is a disk full of usable, above all, **MUSICAL** sounds.

Best selection, best support.

The KEEL EPS Sound Library includes all of the instruments you need for **your** music. 50 jam-packed disks right now, and more coming every month.

Our detailed catalog runs the gamut from Accordion to Xylophone: **keyboards, winds, strings, guitars, bass, synths, ethnic instruments,** and all manner of **percussion.**

KEEL instruments come in every shape and size, from a 186-block **Tuba,** to the 1400-block **Steinberger™ Bass Deluxe.** Many are available in versions for expanded memory as well as standard.

AND we provide total user support, from a comprehensive manual and performance tutorial, to detailed instructions for modifications **you** can make to tailor each instrument for **your** individual needs.

Unbeatable value.

Prices range from $15 per single disk, to as low as $10 per disk in quantity. Here's what you get:

- over 1300 blocks of data on every disk
- 5 - 8 layers and 4 performance patches, per instrument
- premium-grade, certified, double-sided disks
- laser printed labels and documentation
- **money-back guarantee**

KEEL PRODUCTIONS

BOX 467, LAKESIDE
HALIFAX CO., N.S.
CANADA B0J 1Z0
(902) 852-2931

Catalog free. Send $8 for trial disk, $5 for demo tape, both for $10.
HACKER SPECIAL: mention this ad with enquiry, get $10 off first order over $50.

which contacts to a foam pad. If the foam wasn't present, aftertouch wouldn't work at all.

From your description, we would suspect that you're having ground loop problems with the amplifier.

While the explanation of the split-points of the multi-sampled sounds is true, it's possible that there may be a problem with the electronics. Compare it to another SQ-80 to be sure.

The SQ-80 is not a sampler, it is a synthesizer which uses sampled waveforms. All of the sounds are created by adjusting the parameters which process the waveforms. It isn't possible to create patches that everybody likes "as is." Most players find simply editing a patch a satisfactory solution.

The SQ-80 operating software is not on disk so "new disks" would not be of much help.

Whenever you record sustain information, make sure that you don't press the sustain pedal before the sequencer has gone into RECORD (check the indicator on the display). Also, don't press the sustain pedal before you play the first key.

Sustain is a controller just like pitch bend or mod wheel information. In certain circumstances, such as when punching in, you may end up erasing the SUSTAIN OFF command or have notes sustain from a previous SUSTAIN ON command.

The FREE memory display shows bytes, not notes. It is difficult to show notes since controllers (such as pitch bend, mod wheel, poly-pressure, etc.) also take up sequencer memory. (65,000 bytes of memory translates to 20,000 notes.)]

Hey Team,

Just wanted to stick my foot in the door and tell you it is possible to record volume changes into an existing ESQ-1 track while retaining notes and controllers. Just 1) record a second scratch track, 2) embed the desired volume change using a CV pedal (be sure to set PEDAL to VOL on the Master page), 3) remove unwanted note data from the scratch track (step edit), 4) merge the scratch track into the original, and 5) erase the scratch track. Works best if scratch note data simulates or duplicates the mood of the original to be adjusted. Note On's must precede pedal changes so notes can be removed (step edit) without affecting pedal controller data. A little brute forceful but it does work, unless I misunderstood the question (I.O., T.H. #41, Interface). It's a good idea to back up the sequence (or at least the track) before trying this.

Keep it up but keep it clean.

Till next time,
Tune Smith
Somewhere in Kansas

Dear TH,

I have had my EPS for about a month now and I am baffled about something that is going on behind my back, or should I say in front of my face.

First of all, I am using an external sequencer, Amiga 2000 with Sound Quest's Texture. After loading my instruments, including an Alesis HR-16 drum machine and assigning them to their MIDI channels the instruments don't seem to enjoy their location. If I select the instrument on channel 1 and then select another instrument on channel 3, the first instrument does not deselect, but blends with instrument 3 and also reassigns channel 3 instrument to channel 1 MIDI out. This is driving me crazy! What am I doing wrong or is my EPS insane?

Derrick Thomas
Spartanburg, SC

[Ensoniq's response - We're not sure if this is the EPS or the Amiga; there isn't enough information here for us to figure out a solution. Make sure the EPS is in the correct mode, first of all. This is a classic case for the need to call Customer Service rather than trying to solve it through the Hacker.]

Dear SOGI (Source of Great Information),

First off... your publication is worth two-fold the price of the subscription rate.

Second... I really appreciate Ensoniq's continually updating the OS for the ESQ. I realize that they don't have to spend all the extra time, money, and effort on a product that's already great. BUT, I hope they never stop perfecting this unit.

Third... I took a cartridge apart (Gasp, 160-V, and it appears that "they" use the "RAM-Sandwich" technique to double the memory). Where can I purchase these SEEQ (mfg) E2PROMs? Also - can my 10,000 note expander be doubled to 20k by the same

MIDICASTER by Tim Martin

MAKE LIFE JUST A LITTLE EASIER...

With Midicaster. Midicaster is a special operating system that turns the Mirage into a system exclusive storage device. It will store System Exclusive data from any MIDI device (including synths that require two-way communication, such as the CASIO CZ series) - synthesizer sounds, drum machine patterns, sequencer data - Midicaster handles it all. You can even design your own "Midi macro keys", allowing you to add custom functions to Midicaster. Midicaster also formats disks and copies operating systems. And Midicaster is easy to use - you'll become an expert within minutes. Most importantly, Midicaster reads and sends files directly from disk, without disturbing the Mirage's memory.

Here's what the industry is saying about MIDICASTER:

"THIS THING REALLY WORKS!" *MUSIC TECHNOLOGY*, June 1988: "This software is simple enough that you can figure it out without too much trouble. CHECK THIS ONE OUT!"

TRANSONIQ HACKER, May 1988: "It's not expensive and uses a disk drive that already exists. Although it excels in live use, it has applications for studio types as well... MIDICASTER is fast enough to conveniently load patches or patterns or whatever between songs while playing live." "Sysex files can be transferred without disturbing the present samples!"

LARRY KRALL, president of Multimedia Studios: "We were using a computer for sequencing and as a patch librarian. Every time we needed new sounds we had to kill the sequencer, and then load a specific patch librarian for each Midi synth. Now we use MIDICASTER to store sounds for all our Midi gear - the computer does it's job, and MIDICASTER does the rest!"

While you're at it, check out the reviews in *KEYBOARD*, (August 1988), and *MUSIC, COMPUTERS, & SOFTWARE*, (September 1988).

EVERYONE'S RAVING ABOUT MIDICASTER!
MIDICASTER - only $49.95. ORDER NOW:

Yes - please rush me my very own Midicaster.
Enclosed, find my check or money order for $49.95.
Name:
Address:
City, State, Zip:

midi CONNECTION
Clark Salisbury & Erick Hailstone
7280 SW 104th Beaverton, Or. 97005 (503) 643-7286 (24 hours)

technique? If so... could someone share the secrets? I can't accept having to buy another cartridge in either case if I don't absolutely have to. If anyone can help please contact me.

Thanks for a great magazine,
Gregory Madison Brettell
1826 E Indianola
Phoenix, AZ 85016
(602) 274-8049

[Ensoniq's response - The parts are manufactured by SEEQ but you are unlikely to be able to buy them cheaper than we can given the volume pricing. Generally we don't recommend stacking chips due to the increased power consumption.

Approved cartridge vendors who use this technique test their cartridges for proper power consumption. The 10,000 note expander cannot be doubled this way. The design of the SQX-10 and SQX-20 are different and RAM stacking would overload the drive capability of the expansion bus.]

To the Interface,

After using my ESQ1 for almost two years I'm still at a loss for a solution to one problem. In creating new sequences I very often start with an upbeat. This may be one eighth note or it may be half a measure. It usually takes several attempts to enter the first few notes before I hit the right combination for the machine to accept the upbeat as I enter it. On playback the notes are usually smashed into one gosh-awful clump. Is there a method I can use to insure that upbeats will come out as I enter them with one attempt?

One more item. My software version is 3.4. On earlier versions I had no trouble with the metronome control, usually setting it for "1/8" and it would stay there until I changed it. But with version 3.4 the 1/8 will not stay put - the default setting seems to be 1/4 and it reverts to that every chance it gets, necessitating more time consumed in reentering 1/8. How can this be corrected? Does the newest software version remedy this problem?

Thanks,
Don Pribble
Minneapolis, MN

[Ensoniq's response - If you're quantizing, set it to a finer value. If you are synching to an external clock, this can also cause notes to clump together if the clock doesn't have enough resolution.

When you create a new sequence, the time signature defaults to 4/4 and the metronome to 1/8 as these are the most commonly used.]

Greetings,

As you know, as well as being a part-time music software programmer, a part-time composer, a part-time genetic engineer, as well as a fully qualified and licensed airline pilot, I am also an amateur inventor. Since my latest invention relates to a particular Ensoniq keyboard, I thought I would share it with you and your readers.

The Ensoniq EPS sampler has got to be one of the hottest samplers I've ever used. I use it every day while transcribing the entire works of Mozart into my Commodore 64 sequencer. Here's the problem I have with it though. My sequencer sends an ALL NOTES OFF message when a note normally ends, but if the sequence is stopped before a note ends, an ALL NOTES OFF message is sent which should effectively stop all notes. Which it does, except for the notes playing in the EPS. My EPS is the only piece of gear I have which doesn't respond to this message. To solve this problem of stuck notes I would always end up having to run across the studio, dodging my scale model nuclear fission reactor, and carefully winding around my collection of failed "better mouse traps." Upon arriving at the EPS, I would have to slam my arm across the keyboard to de-allocate all the stuck notes, then make my way back to the computer. "Whew!", I thought to myself, "All this running around just to kill a few stuck notes, there must be a better way..."

Well, now there is, with my latest invention, the ANOID (the "All Notes Off Immediately Device"), pronounced "annoyed". It is a simple hydraulic device which clips on to the backside of the EPS and can be activated by a pushbutton anywhere in the room. In my case I have attached the button to my computer so it is readily at hand. When the button is depressed, an arm snaps forward, much like a mouse trap, and a rigid, felt-lined pad presses down along the EPS' keyboard. When the button is released, the arm returns to its original position out of the way behind the EPS and all the stuck notes will have been de-allocated. Simple, yet elegant, the ANOID works perfectly every time, saving me hours of cumulative wasted time, energy, and frustration.

The great thing about the ANOID is it only costs about $5 in parts, all of which are available at your local hardware store, and it can be assembled in one evening. It's clear to me that this product could be quite lucrative, since so many people apparently have similar problems with their EPS. Maybe Ensoniq would consider selling my ANOID along with their EPS? But, come to think of it, maybe it might be cheaper for them to just update their software once and for all and include the ALL NOTES OFF response as a switchable option, much like their other options; PROG CHANGE Y/N, MIDI SYSEX Y/N, MIDI CONTROLLERS Y/N, or MIDI SONG SELECT Y/N?

In any case, until we know what Ensoniq is up to, I would be happy to supply the blueprints to any of your readers, for a nominal fee of course, if they desire to build their own ANOID.

Yours truly,
Steven Thadius Pierpont Fox, Esq.
CEO, Leaping Lizards
Seattle, WA

[TH - We called and asked Steve if he really wanted to keep beating this dead horse, and he felt that the idea of a SWITCHABLE All Notes Off option was worth having everyone read through this again. Could be. Ensoniq's response follows...]

[Ensoniq's response - Obviously a switch could be added as a feature, and it is a good idea. However, there is not enough room left in the EPS operating system to add a switch and implement the switch function.

Quite honestly, we've had very few complaints about this (as most MIDI equipment in this day and age does not violate the MIDI spec by transmitting ALL NOTES OFF in lieu of NOTE OFF events).

This is just one of a long list of suggestions that will be given consideration during the development of future products.]

SQ-80
VOICES!
1040+ New Voices On Disk!
Sound BANK
"All in all though, a better buy could not be found."
- Patrice DeVincentis, *Transoniq Hacker* 3/88
$39.95 +$2 SHIPPING & HANDLING
Fred's Music Shop
212 W. Lancaster Ave.
Shillington, PA 19607
(215) 777-FRED (3733)

SOUND LOGIC™
ESQ'1/SQ-80
80-Voice EEPROM Cartridge....$42.95
160-Voice EEPROM Cartridge...$79.95

"The Pedal Organizer"
Only
$19.95

• 1/8" BLACK ANODIZED BASE
• VELCRO FASTENING SYSTEM
• LOW PROFILE
• RUBBER FEET PREVENT SLIPPING
For free brochure or to order:
619-789-6558
SOUND LOGIC
1125 ELEVENTH ST
RAMONA, CA 92065
Free shipping & handling - Free support

TRANSONIQ HACKER

1402 SW UPLAND DR., PORTLAND, OR 97221, (503) 227-6848

FORWARDING AND RETURN POSTAGE GUARANTEED

**BULK RATE
U.S. POSTAGE
PAID
PORTLAND, OR
PERMIT NO. 913**

**SUBSCRIPTION MATERIAL
DATED MATERIAL - TIME VALUE**

Publisher: Eric Geislinger
Editor: Jane Talisman
Staff: Erica Gullixson

Our (somewhat regular) illustrious bevy of writers includes: Chris Barth, Michael Carnes, Dave Caruso, Walter Daniel, C. R. Fischer, Steven Fox, Rick Hall, Erick Hailstone, Jim Johnson, Duane King, Dick Lord, Kenn Lowy, Sam Mims, Clark Salisbury, Jordan Scott, Mick Seeley, and Don Slepian.

Copyright 1988, Transoniq Hacker, 1402 SW Upland Drive, Portland, OR 97221. (503) 227-6848 (8 a.m. to 9 p.m. Pacific Time)

Advertising rates: Please send for rate card.
Rates for authors: Typically 4 cents/word upon acceptance.

Subscriptions: 12 monthly issues. US: $23/year, All others: $30/year. Payable in US funds.

Transoniq Hacker is the independent user's news magazine for Ensoniq products. Transoniq Hacker is not affilated in any way with Ensoniq Corp. Ensoniq and the names of their various products are registered trademarks of the Ensoniq Corp. Opinions expressed are those of the authors and do not necessarily reflect those of the publisher or Ensoniq Corp. Printed in the United States.

CMRG

C&M RESEARCH GROUP
302 RIDGEHAVEN PLACE
SAN ANTONIO, TEXAS 78209-3424
(800) 289-CMRG (Orders)
(512) 826-0721 (Voice)
(512) 826-0659 (Modem)

Brochure and demo disk available on request. M1 and MT-32 versions available soon. All brand and product names are trademarks or registered trademarks of their respective holders. ***DEALER INQUIRIES INVITED.***

REMOTE CONTROL™:

The Remote Control line of products all have the following features:

- User-friendly commands
- Context-sensitive help
- Keyboard macro support
- Free product support
- Mouse and Printer Support

REQUIREMENTS:

- MPU-401 (or compatible)
- IBM PC/XT/AT (or compatible)
- 256K of RAM

A patch editor/librarian for the Ensoniq ESQ-1, ESQ-M, and SQ-80 for use with the IBM family of computers.

- Graphic patch editor
- Sequence librarian
- Up to 26 banks in memory at once
- EPS and Mirage librarian support added
- $89.95 suggested retail

ESQ

The Remote Control line of products are **NOT COPY PROTECTED!**

GEN

A general patch librarian for any MIDI device.

- Programmable librarian
- Up to 23 banks of data from multiple MIDI instruments or devices
- $99.95 suggested retail

Winter NAMM INTERNATIONAL MUSIC MARKET

Visit us at Booth #9210