

# TRANSONIQ HACKER

*The Independent News Magazine for Ensoniq Users*

## THE ENSONIQ SQ-80 CROSS WAVE SYNTHESIZER

*Ensoniq Corp*

Think of a synth with the sound and features of a studio instrument, but built to take the rigors of the road at a price that's affordable for most any working musician. You've just invented the new SQ-80 Cross Wave Synthesizer from Ensoniq.

What would a bowed bell sound like? How about a plucked vocal? The SQ-80 can provide the answer to these and hundreds of other sonic questions with a technology called Cross Wave Synthesis.

The Cross Wave technique involves grafting the attack characteristics of acoustic instruments onto the very beginning of a synthesized sound.

The transient attack waves consist of a selection of multisampled bow, pick, mallet, hammer and breath attacks as well as percussive and synthesized variations. So you can recreate the sound of acoustic instruments with startling accuracy or invent new sounds with real character and personality.

The SQ-80 has 75 multisampled and synthesized waveforms on board. There are even 5 complete multisampled drum sets that can serve as the basis for an exciting array of synthesized percussion sounds.

The SQ-80 features the new Ensoniq Poly-Key pressure sensitive keyboard. Poly-Key pressure adds new dimension to the idea of aftertouch. Each individual key can respond to how hard you hold it down with dozens of dazzling effects.

The SQ-80 lets you really use the magic of MIDI in live performance. In addition to programs and sequences, the built-in 800k disk drive can save and load MIDI system exclusive data - sounds for voice expanders, patterns for drum machines, settings for signal processors and MIDI samples.

So you can plug in your MIDI cables, power up, slide a disk into the SQ-80 drive and be ready to play before the guitar player tunes up. Each disk can store up to 1728 different programs and 10 full sequencer banks or system exclusive blocks.

Because of its large selection of waveforms and wide-open voice architecture, the SQ-80 is the perfect replacement for any analog, FM or LA synth.

### SQ-80 SPECIFICATIONS

#### KEYBOARD

61 note (C-C) weighted-action keyboard with velocity sensitivity and Poly-Key pressure (polyphonic aftertouch)

Programmable split point

Sound layering on either or both keyboard halves

Polyphonic glide, fingered mono glide

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## VOICE ARCHITECTURE

- 8-voice polytimbral
- 3 digital wave oscillators per voice
- Amplitude modulation on each oscillator
- 75 multisampled and synthetic Waveforms, Transient Attacks and Inharmonic Loops in memory
- 15 routable voice modulation sources
- 3 multi-waveform LFO's per voice with humanized random variation
- 4 complex envelope generators per voice, velocity controlled, with simulated reverb (second release) stage
- Programmable panning
- Hard sync and ring modulation (AM)
- Analog filters, 4-pole low-pass with variable resonance

## PROGRAM PARAMETERS

- 80-character fluorescent display, readable in all lighting conditions
- 10 program names simultaneously displayed
- Multiple display pages for simple yet flexible programming
- 40 internal programs, direct access
- 80 external cartridge programs, direct access with cartridge installed
- Compare mode for comparing programs

## SEQUENCER

- 8 polyphonic tracks, each with separate Program, Volume, and MIDI channel
- Tracks can play internal voices and/or external MIDI instruments
- Up to 8 voices per track, dynamically assigned
- Post-quantization (auto-correct to 1/32 note triplets)
- Built-in auto-locator and metronome
- Mixdown facility for balancing individual tracks
- 60 separate sequences, chainable into 20 songs
- Internal memory - 20,000 notes
- Sequence storage - on 3.5" disks or audio tape
- Sync to tape

## MIDI

- Poly, Omni, Multi and Mono modes
- "MIDI Overflow Mode" permits slaving additional units for 16 or more voices
- 9 simultaneous polyphonic channels with separate programs
- Global controllers in mono mode for use with MIDI guitar controllers, etc.
- MIDI song position pointers for use with SMPTE auto-locators
- MIDI standard remote programming

## DISK

880K double-sided 3.5" micro-floppy

Each disk stores:

- 10 Seq/Sys-Ex files +
- 40 Bank files +
- 128 single programs

Save to disk MIDI System Exclusive dumps of up to 64k from any MIDI device

## INPUTS/OUTPUTS

Left and Right/Mono audio outputs allow programmable stereo mix

Headphone jack

Pedal/Control Voltage Input (allows modulation of voices from an external source or pedal control of volume)

Sustain Pedal, Sequencer Footswitch, Tape In/Out for sync and storage

MIDI In, Out, Thru

## STANDARD ACCESSORIES

Musician's Manual, detachable power cord, Sustain Pedal/footswitch - for voice sustain or sequence triggering.

Voice/Data Disk #1

## OPTIONAL ACCESSORIES

Ensoniq E2 PROM Cartridge - for storing up to 80 player-created programs

Additional Voice/Data Disks

CV Pedal - for voice modulation

Footswitch

**DIMENSIONS:** 38 3/4" (98 cm) wide x 3 1/2" (9 cm) high x 13 1/2" (34 cm) deep.

**WEIGHT:** 29.2 pounds (13.2 kilograms).

**WARRANTY:** One year, parts and labor.

**PRICE:** Under \$2000.

## ENSONIQ EPS PERFORMANCE SAMPLER

Truly the first sampling keyboard designed for live performance. The EPS is the only sampler with "Performance Loading", a feature that lets you go on playing while sounds are loaded from diskette.

It also features the Ensoniq Poly-Key pressure sensitive keyboard that lets each individual key respond to how hard you strike it and how hard you hold it down.

It will have 24-bit dynamic range, a multi-track sequencer and will be under \$2000.

*Complete information will be published in next month's Transoniq Hacker.*

## RND (🎵)

Well, as you can see, the information on the new instruments made it into this issue. We had to delay the mailing this month in order to accomplish this - so that's why you're reading this a little late. Next month, we hope to have more of a "first look" type of article on the SQ-80 and an introduction to the EPS (similar to this month's cover story on the SQ-80). The following issue should have the "first look" article on the EPS. At least that's the plan.

\* \* \*

Our page count is up almost 30% this issue. If this holds steady (or increases) for a while, we'll probably be getting our printing done on a web press. What does this mean to you? Probably not a whole lot - but we will be able to go to slick paper, have better photo reproduction, and maybe even an occasional spot of color.

\* \* \*

The ESQ-1 user group of Philadelphia (ESQUPA) will be presenting a demonstration of the two new Ensoniq products on Tuesday, Dec. 1. ESQUPA members should contact Tom McCaffrey, 215-750-0352.

\* \* \*

Occasionally we get inquiries about sound-processing software for the Apple IIGS (the one with Ensoniq's Q-chip). Well, we sure don't know of any. If you do (or if you're developing some), please give us a call or drop us a note so we can pass on the info.

\* \* \*

Jordan Scott sends us an additional comment regarding his article last month, "Using the Mirage as a Synthesizer": In the parameters for the "Brazilian Flute" sound, the chorusing of P33 (value:08) has no effect since oscillator mix (P34) was set to 0. If you do want chorusing, raise P34 to some intermediate value like 31 or 32. Jordan has also decided to put his concepts on the market - see the ad for CYBERSONIQ in this issue.

\* \* \*

We've been mailing sample issues to Ensoniq's "warranty card list." If you end up with an extra copy, please pass it on to a musician friend or a music store.

\* \* \*

## TRANSONIQ-NET

The following people have agreed to help with questions:

**ESQ-1 QUESTIONS** - Tom McCaffrey, ESQUPA. (215) 750-0352, before 11 p.m. Eastern Time.

**ESQ-1 QUESTIONS** - Jim Johnson, (602) 821-9266. 5 to 10 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 Eastern Standard time.

**SAMPLING & MOVING SAMPLES** - all over the place. "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) 962-0549. Business hours, Eastern Time (Toronto, ONT).

**MIRAGE/ESQ-1 COMPUTER BULLETIN BOARD** - Provided by John Connolly of Portland, Oregon for information exchange and file transfer. "Ensoniq-Net": Phone (voice): 503-641-6260. Phone (BBS/computer): 503-646-2095. Free messages. Yearly membership for upload/download: \$35.

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

**MIDI & SEQUENCING** - Leslie Fradkin, Metropolis Music. Eastern Time (NY). Calls between 10 am and 9 pm. (212) 246-8420.

**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. Mountain Time (AZ). 3 pm to 9 pm. (602) 937-1177.

## BACK ISSUES

Back issues are \$2. each. (Overseas: \$3 each.) Issues 1-8, 11, and 13-18 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. Permission has been given to photocopy issues that we no longer have available - check our 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.

## HYPERSONIQ NEW PRODUCT RELEASES

"Don Slepian Music Video" VHS Videocassette Released By VIDEO-SIG. The Don Slepian Music Video is a most unusual live electronic music and dance program featuring Audion recording artist Don Slepian's performances on the Ensoniq Mirage Digital Sampling Keyboard and the Ovation GTM-6 Classical Guitar To Midi Converter, as well as some highly original microcomputer graphics and video art. This 55 minute VHS color videocassette is available by mail for only \$18.95 postpaid. Order Tape #12868 from VIDEO-SIG, 1030 East Duane Avenue, Suite C, Sunnyvale, CA 94086. Phone Orders nationwide call (800) 245-6717, inside California call (800) 222-2996. FOR FURTHER INFORMATION: Contact Don Slepian at (201) 937-4832 or VIDEO-SIG at (408) 730-9291.

\* \* \*

Mescal Music has released their first set of 40 quality patches for the Ensoniq ESQ-1. The patches are divided into 4 separate groups: Keyboards, Orchestral, Percussion, and Special Effects. All of the programs are carefully tailored to take advantage of the complex sound textures that the ESQ-1 is capable of producing. To keep costs down for the customer, the programs are offered in the data cassette format. Included with the cassette are performance suggestions, as well as a discount coupon for future patch offerings. The complete package is only \$20.00 (CA residents please add 6.5% sales tax). Mescal Music, P.O. Box 5372, Hercules, CA 94547. (415) 724-0804.

\* \* \*

Leaping Lizards has announced a new operating system for the Mirage: O.S. 3.d. 3.d turns your Mirage keyboard into a much improved controller keyboard by offering the following performance enhancements: (1) The ability to receive and transmit MIDI information on separate, selectable MIDI channels, (2) the ability to redefine the mod wheel to transmit other controller information such as breath control, foot control, balance, main volume, and others, (3) the footswitch can also be redefined to send other information, (4) the ability to transpose (by semi tones) the keyboard so that its effective range (both Mirage voices and MIDI data) totals 128 notes and, (5) a "panic - all notes off" button. Price: \$24.95. LL is also offering a new O.S. to sample vendors (O.S. E.2) that prevents samples from being copied. Call for info. Leaping Lizards, 10026 36th Ave NE, Seattle, WA 98125. (206) 527-3431.

\* \* \*

Hitech Innovations is offering a variety of products that support the ESQ-1. Various ROM and EEPROM cartridges, voice tapes, IVM's disk drive, and even a piano course structured around the ESQ-1. They're offering special sale prices on many items till Jan. 1. Send or call for a product list: Hitech Innovations, P.O. Box 16-1239, Sacramento, CA 95816. (916) 362-1449.

## 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!)

## ESQ-1 NEWS FROM HEAVEN

Congratulations on your purchase of an American made ESQ-1 Digital Wave Synthesizer. There is no better songwriting tool available for anything close to the price. It's basically like a series II Fairlight CMI, minus the 2 seconds of input sampling and about \$25,000. However, it takes quite a bit of time to come up with the truly radical sounds, soooooo- we made the BBC series of ROM, RAM, RAM/ROM, RAM/RAM, and ROM/ROM cartridges for the ESQ-1. Each cartridge comes with sounds that provide a complete songwriting environment.

- Each BBC series cartridge includes:
- \*80 -160 original patches
  - \*Soundguide(TM)
  - \*One year warranty
  - \*Gold-plated edge conn.
  - \*Protective anti-static bag

BBC- cartridges have great sounds at a great price. If that sounds good to you, you can now order-direct from HEAVEN.

### INTRODUCTORY PRICES

80 voice ROM	\$35.
80 voice EEPROM (RAM)	\$45.
160 voice ROM	\$55.
160 voice RAM/ROM	\$65.
160 voice RAM	\$85.
80 voice Data Cassette	\$14.95
80 voice Data Book	\$9.95
Demo Cassette	\$FREE

### CHOOSE HEAVEN

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To Order: Send check or money order to the address below. Add \$3.00 Shipping/Handling. CA residents add 7% sales tax. Heaven P.O.Box 2550 Saratoga, CA 95070 USA For C.O.D orders call 408-554-2922 (24 hours).

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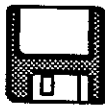
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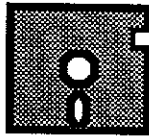
## The ultimate collection of ESQ1 Sounds

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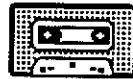


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USA & CANADA Shipping/Handling add \$3.00, \$10.00 for Airmail. Payments must be in USA funds payable thru a USA Bank!

All other countries add \$10.00 S/H for surface, \$17.00 for Airmail.

Prices/Spec's subject to change without notice. ESQ1 is a trademark of Ensoniq, Inc.

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# ESQ-1 MOD: DEWITT'S CLICK

By Greg DeWitt and Kim Monday

## Boon or Bane?

Like it or not, sequencers are a fact of life in the club scene today. Amazing new products like Ensoniq's ESQ-1 take advantage of an easy to use sequencer and multi-mode synth in an affordable package, but not without some drawbacks. The ESQ-1's sequencer has one serious drawback for club work, the click track.

The simplest way for a drummer, or any band member for that matter, to follow the ESQ-1's sequencer is to listen to the click track. Unfortunately, if the band members can hear it, so can everyone in the club because the click track only comes out of the main audio output jacks along with the synth's sound. Why Ensoniq chose to do this to an otherwise great synthesizer is anyone's guess, but there are several ways around this.

Kahler's "Human Clock" seems to be the ultimate answer to this problem, but besides the price tag, the jury's still out on how well it really works. Another way around the problem is to sync a drum machine to the ESQ-1's tape out or MIDI out, depending on the drum machine, or write a click track for a separate synth in the sequencer, then feed the output to the drummer's monitor. The problem with these solutions is they waste the drum machine, or a synth and a track on the sequencer, when the ESQ-1 has (with slight modification) the capability of doing this on its own. Face it, most bands don't have an extra drum machine or synth just lying around, anyway.

However, this easy modification definitely has a drawback of its own. It voids your warranty, so be sure you really need it before you open the lid. With this caveat out of the way, on to DeWitt's Click.

For all you techno-geeks, the mod removes the click signal before it's mixed with the oscillator output and routes it to a separate jack (see schematic). Since both signals at this point are analog, this modification in no way tampers with the digital domain of the ESQ-1. Really, all that's involved in this mod is removing one leg of capacitor C54 on the main board and installing a switching 1/4" jack in the back, with a blocking cap (0.15 mfd) in case someone plugs something silly into the extra jack instead of a lead to the monitor system. Of course, a strong enough signal (such as a speaker output), will do grievous damage, blocking cap or not.

## The Modification

First remove the four hex screws from the top. Next, the keyboard comes out with 10 phillips-head screws from the bottom (remember which way the keyboard plug goes in - red stripe to the front). Now, if you have a sequence expander cartridge, it will have to be removed. This is a good time to remind you that you're gonna lose all your sequencer data and internal sounds, so make sure you save them to tape or disk BEFORE you start.

Now, remove the 7 nuts off the jacks in back and 1 screw on the board between the left and right output jacks. The only things holding the board now are the standoffs. Pull it free and tilt it up. Whew, just remember you have to put it all back!

Next, locate C54 on the main board. (NOTE - this capacitor is designated C74 on the old-style ESQ-1. The designation changed when the ESQ-1 was repackaged.) It's about 1 1/4"

directly in front of CV jack. Now, unsolder the leg of C54 closest to the rear of the board. Please remember that this is a double-sided board and requires a little more heat than normal, and is therefore easier to damage, so be careful.

With the board loose, now is a good time to drill a hole to fit the new jack in the chassis next to the right output jack. All you need now is a length of wire from the loose leg of C54 to the tip of the jack and another piece from the empty hole (left on the board by removing the cap leg) to the 0.15 mfd cap you mount on the switched side of the jack.

When I did my mod on my ESQ-1, I used 2 conductor shielded cable, an insulated jack, and I tied the shield to ground on the board, because Ensoniq uses them on their outputs to minimize ground loops. A non-insulated jack would keep you from looking for a ground on the board and would probably work, but why take chances?

## Reassemble, Reinitialize, and Relax.

To reassemble, you basically follow the above instructions in reverse order. Make sure that the jack you installed is not shorted to the case or main board. If you removed a sequencer expander cartridge, you have to reinitialize the system. You do this by pressing the Record button and the upper left soft button on the front panel and then answer "yes" to the prompt.

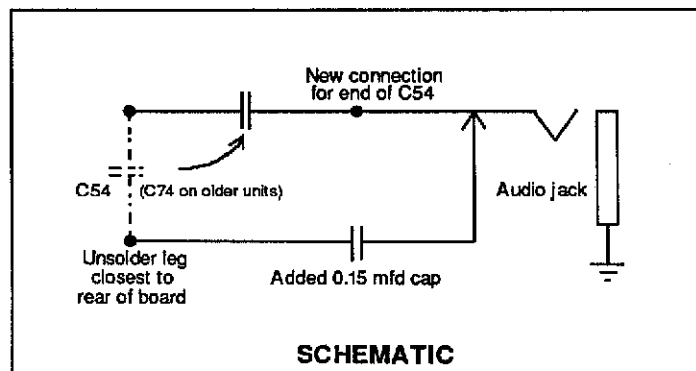
With nothing plugged into the newly installed "click jack" the ESQ-1 operates normally. When a 1/2" plug is inserted into the click jack, the click sound is diverted from the normal outputs and sent out this jack instead. All functions on the control page are still operational, so make sure you've enabled the click, or you won't hear anything. Now relax, your drummer doesn't have an excuse for not following your sequences anymore.

## Parts List

- (1) 1/2" insulated, switching jack
- (1) 0.15 mfd capacitor @ 15 VDC

*Bios: Greg DeWitt is a technician at O B Fawley Music Company in Morgantown, West Virginia, an authorized Ensoniq Service Center. He's an accomplished keyboard player and modifies and burns ROMs for arcade games.*

*Kim Monday is also a technician at O B Fawley's, is a talented engineer, and lives under a rock. ■■■*



# SEQUENCES FOR ESQ-1 BY ROBERT SANSON

By Michael Carnes

FOR: ESQ-1  
PRODUCT: Bach's Brandenburg Concerto #2.  
PRICE: \$35.00  
FROM: Robert Sanson, 71 Pleasant St., Keeseville, NY 12944.

We have here an early example of something I believe will become common - music distribution by sequence. A performance you can plug into your own system. And there are many valid reasons to do it - composers can send their new music out into the world. Marketers can demonstrate their hardware or voices. Musicians can perform old music in a new way. These are all good reasons that should be kept in mind to avoid reacting to the idea out of prejudice.

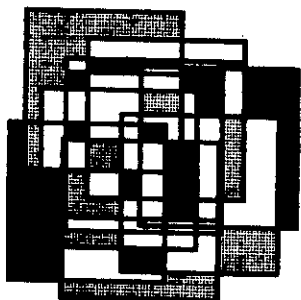
My first reaction to Mr. Sanson's package was rather incredulous. The sequences were on tape, but there were no voices. Instead, the documentation told me to reload the original factory voices (now where's that old tape..) and then take the program sheets and key in a few more voices on top. That is surely an unnecessary bother.

After all of that was done, I listened to the sequences. The entire performance takes a little over ten minutes, and it's a very long ten minutes indeed. Each movement stays at its given tempo and never wavers - not a single accelerando or

ritard in the whole thing; every note firmly quantized in its place. The first movement was built out of just two sequences and the other two were a single sequence each. This resulted in a very monotonal performance, with a minimum number of voice or level changes. This is made even worse by the absolute lack of nuance in the use of the voices. No subtle bends or colorations, no performance modulation. No Bach.

This package is by all appearances Robert Sanson's first experience with the ESQ-1. Bring it home with factory settings, make a few simple voice changes, drag the Bach book off the shelf and push the buttons. I have gotten Christmas cards that were more musical than this. The idea is fine, and it's entirely possible to do sensitive performances with the ESQ's sequencer. It takes musical understanding and the ability to evaluate the tradeoffs you have to make with the hardware. Performing old music, whether Bach or Bartok, is a fine way to learn to do this. You'll learn about the equipment and you'll learn about the music. Just don't try to sell it the first time out.

*Bio: Michael Carnes is a composer/engineer whose "Concertino" for trumpet, chamber orchestra, Mirage and ESQ-1 was recently premiered in Boston. ■*



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# LOOPING USING VISUAL EDITORS

## Part 1. Basics, Bidirectional Looping

By Walter Daniel

I believe that Mirage samples cannot be effectively looped unless one is using a visual editing program with a computer. (I'm referring to long loops only.) Unfortunately, most such programs have manuals that detail operations of the program, but not looping techniques. I hope to address this problem with a two-part article in the Hacker. The first part will cover the basics of looping and the simplest advanced technique. The second part in a future issue will cover two types of crossfade looping - reverse crossfade and endfade. I'll describe the types of sounds that loop well with each method. I even have some screen dumps of waveform plots to illustrate for what you should be looking at when looping. There have been some articles on these subjects in the past, notably the Tom Metcalf interview by Richard Boulanger (Issues 11-13). An article about crossfade looping by David Meschter appeared in Issue 15. I had some problems with his techniques which I addressed in an article in Issue 22. Some of this material appears in the Mirage Operations reprint published by TH.

**PROPERTIES OF SOUND.** There are two properties of sound that are quite important in looping applications. A sound that is reversed or inverted is essentially the same as it was before being so modified. This fact is proved by Fourier analysis which shows that a reversed or inverted (or both) waveform has the same harmonic content as the original. Inverted samples can appear identical to originals except for a difference in phase. Why are samples inverted? This modification is used to create a smooth crossing (from positive to negative values and vice versa) when manipulating data. Reversed waveforms can appear similar, but they can also be very different from originals. A reversed, sustained sound might look the same on a plot, but the evolution of the harmonic content takes place in the opposite direction. A reversed, non-sustained sound such as a piano will be different because the volume change takes place in the opposite direction. Looping is performed on segments of samples with similar volume, so the decaying sound is not problematic. Think of a sample as a series of single cycle waveforms; a reversed sample has the same series of waveforms, this time in reverse order. Why are samples reversed? Looping is done with similar sections of samples, so reversing can be used to bring similar sections of samples together at the loop point.

**MIRAGE PROPERTIES.** There are some quirks in the design of the Mirage that impose certain requirements for good loops. The first is that loops should begin on nice, even pages such as \$80, \$40, and \$C0. See the Advanced Sampler's Guide (ASG) for details. Another item of which to be aware is that loop start pages should always begin on a zero crossing. It seems that a loop on any value, if properly matched, should sound good, but the design of the Mirage requires zero crossings for best results. If you don't believe me, use your visual editor to examine any of the Ensoniq factory disks you like. The ASG describes the procedure to tune source material so that samples have one cycle per page of memory (or one cycle per two pages, etc.). It is good practice to sample in this manner because many of the advanced manipulations are easier if the sample is lined up with the page boundaries. Again, check some factory disks to see this in practice.

Looping actually consists of setting certain addresses to control the use of data by the Mirage. In these two articles, I'll use the convention that a number preceded by a dollar sign is hexadecimal value (example: \$7D), a number preceded by a number sign is a Mirage parameter (example: #61), and a

number with no prefix is a decimal value (example: 31). Wavesample start and end pages are set by #60 and #61. The loop start pages are set by #62 and #63. Loop end fine adjust, #64, determines the location within the loop end page that is the actual end of the loop. The loop switch is #65. When the loop switch is on, the Mirage inserts an end-of-loop marker of sixteen zeroes (appear as value -128 on plots) into memory. Always leave room in a wavesample for this marker. Use a loop end page (#63) one less than the wavesample end page (#61) or use a loop fine adjust (#64) of \$DF or less if #61 and #63 are equal. If there is not enough room for the marker, the Mirage will push the loop end forward and ruin a smooth loop splice. The marker can also wreak havoc on data manipulations, so turn off the loop switch before doing any reversing, inverting, or copying operations. The Mirage will change loop parameters when wavesample or loop boundaries are altered. If the loop end page is changed, the Mirage will move the loop end fine adjust back up to \$FF. If the wavesample end page is lowered, the loop end page will be changed to a value of one less than the new wavesample end. Keep these automatic changes in mind when redefining loops and wavesamples.

**THE VISUAL EDITOR.** What does a visual editor do? There are three functions that are important for looping: displaying waveform data, listing Mirage parameters, and sending MASOS commands via MIDI. Displays are required for matching sections of waveforms, determining amplitude and phase for crossfade looping, and verifying quality of samples. Figure 1 is a screen dump of such a display; the continuous curve is waveform data. Grid lines are drawn to show amplitude value. The Mirage stores samples as eight-bit numbers with values from 0 to 255. Zero corresponds to the end-of-loop marker described above. A value 128 is subtracted from the eight-bit number to show the point on a plot. A value of 1 in Mirage memory corresponds to -127 on a plot, a value of 128 to 0, and 255 to +127. Many programs also have a feature that plots the loop end data next to the loop start to facilitate looping. Parameter lists ease programming filter and envelope settings as well as showing the way in which memory is allocated to wavesamples. Advanced looping techniques are nothing more than manipulations of Mirage memory which use extensive MASOS commands. Sending MASOS commands from a keyboard is much simpler than executing them from the Mirage keypad because the computer can show all addresses and scale factors at once. It's easy to make errors in MASOS manipulations unless all appropriate information is available when sending the command.

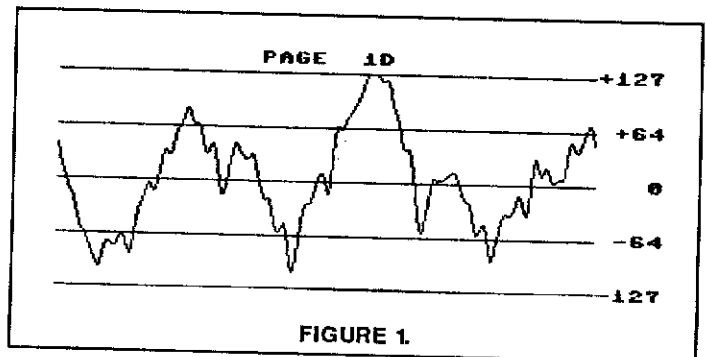


FIGURE 1.

**FINDING LOOP POINTS.** The most basic type of looping is to attempt to match cycles of a sample at compatible points. This technique works best with sounds that are not overly



complex such as synthesized ones. These sounds are predictable and will most likely repeat cycles exactly. Involved acoustic sounds, especially ensemble ones, are difficult to loop in this manner because the waveform is not strictly repeated. To begin, find a suitable loop start page after the initial transients (if any) have settled. Perform a MASOS rotation to line up a zero crossing at the beginning of that page. It's good practice to rotate left to avoid introducing any spurious data from the end of the wavesample memory. Program the loop start page in the Mirage (#62). Next, sketch a cycle before the loop start point and a cycle after the loop start point on a piece of paper. Use the grid of the computer display to pinpoint waveform amplitude and shape. Now, begin searching for the loop end point by working from the end of wavesample memory toward the beginning and look for cycles that match the sketches. The cycle just before the loop end point should match the cycle just before the loop start point, NOT after the start point. The idea is to have the sound move smoothly across the loop boundary as closely as possible to the crossing from the initial portion into the loop region. Also, match the same PORTION of a cycle - if the loop start point goes positive, then the loop end should be moving from negative to zero to smoothly transition to positive values. If your visual editor can display the loop splice directly, use the feature to find the zero crossings. Once the loop end point is located, program the page (#63) and fine adjust (#64) in the Mirage. Turn on the loop switch (#65) and audition the loop. If it is not acceptable, try finding another loop point. Trial and error is often a powerful technique!

An example is in order. Figures 2-5 are plots of a string machine sample. (Remember those keyboards from the 70's?) Figure 2 is the page just before the loop start point. I rotated the sample left a few pages to line up the start point I wanted. That's why the page before the loop start (page \$00) is at the end of memory. Note that the sixteen points at the end of Figure 2 are not related to the sample because that's where the end-of-loop marker was when I performed the rotations. Figure 3 is the page just after the loop start point. Ideally, the loop end point will match the cycle in Figure 2.

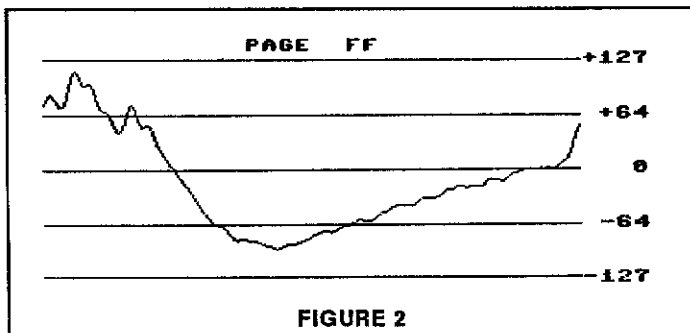


FIGURE 2

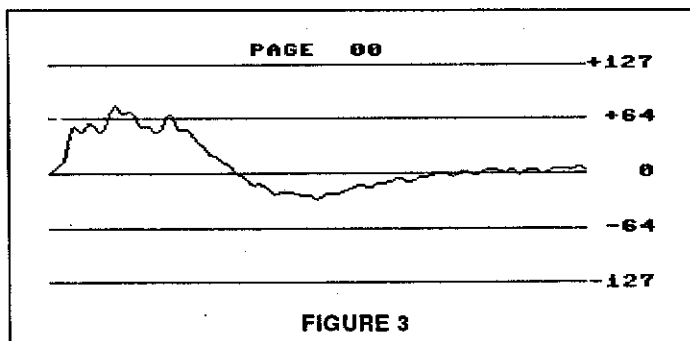


FIGURE 3

Figure 4 contains most of the cycle just before the loop endpoint. Note that it is similar to the cycle in Figure 2 - not a perfect match, but the best possible with this sample. Figure 5

contains the end-of-loop marker and most of the cycle just after the loop. The cycle just after the loop end is similar to the cycle just after the loop start (Figure 3), as is required for good results. This sample loops reasonably well, but clicks are noticeable in the higher pitch ranges. In general, this technique will work with sounds that repeat cycles at least once within the sample. Complex acoustic sounds will not repeat exactly, so those sounds cannot be cleanly looped with this method. You might be able to find a mediocre match with clicks that are covered by chordal playing. Otherwise, complex sounds are best looped by using data manipulations.

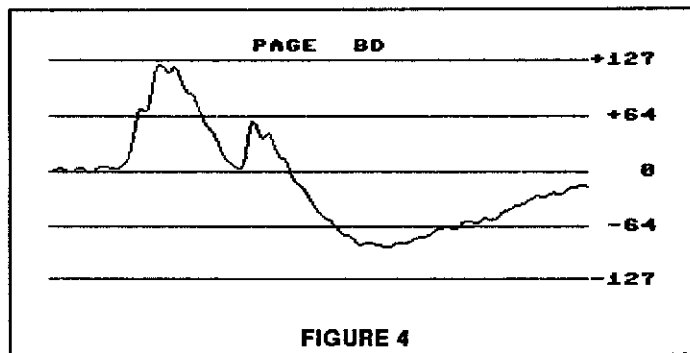


FIGURE 4

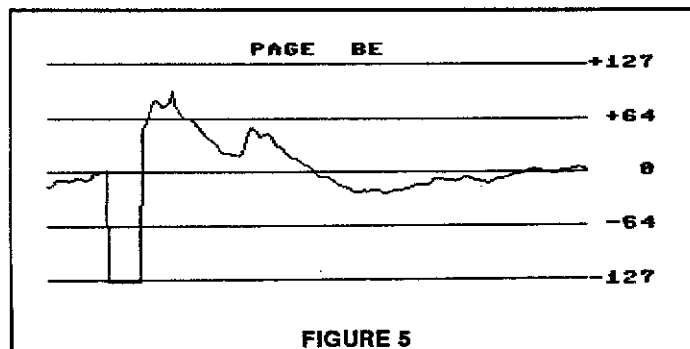


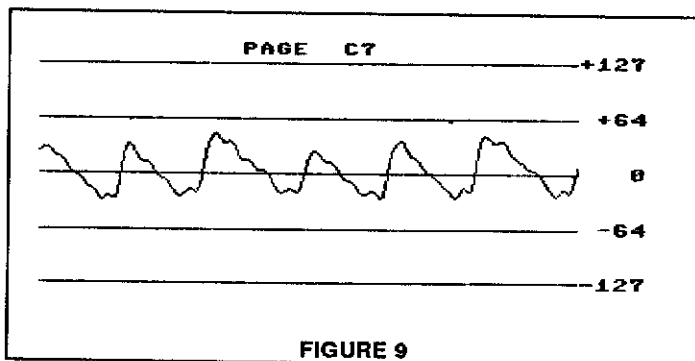
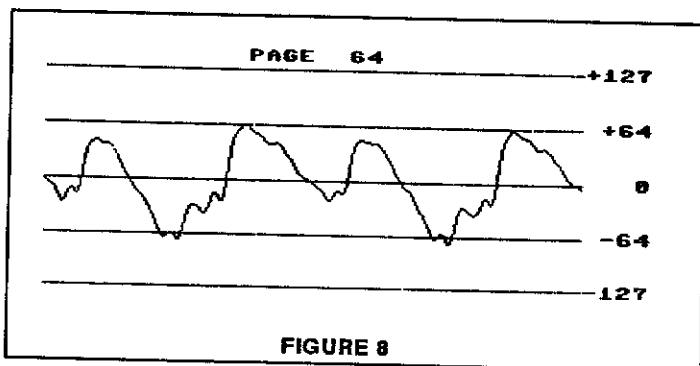
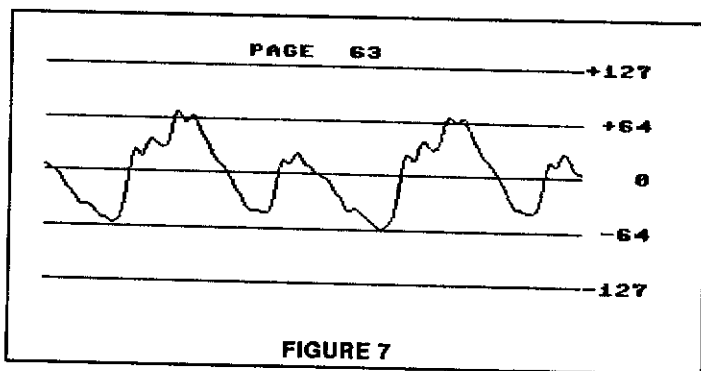
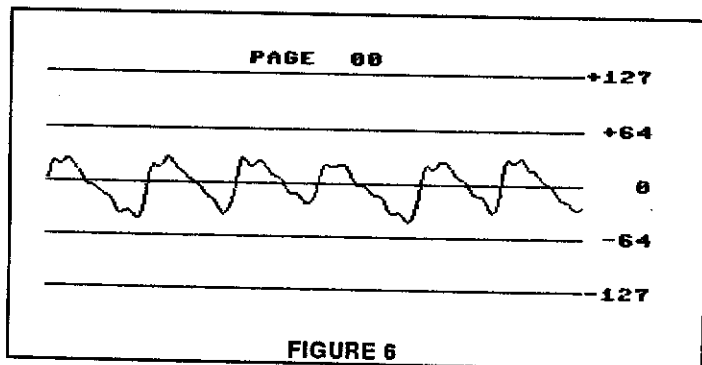
FIGURE 5

**BIDIRECTIONAL LOOPING.** The first advanced looping technique is to manipulate the sample data so that the loop portion is played in a back-and-forth manner. Bidirectional looping is most useful with predictable sounds such as synthesized ones because the direction changes are abrupt. For example, a sound with a filter sweep that does not repeat within the sample memory can be modified so that a limited sweep takes place back and forth within the loop. To begin, locate a suitable loop start page and line up a zero crossing at the start of the page. For best results, the end of the original sample needs to end on a zero crossing or close to one. Sampling with one cycle to the page is quite advantageous here. The loop portion of the original sample is copied to the location just after the original part, reversed, then inverted. The reverse creates the back-and-forth motion; the inversion creates smooth zero crossings (from positive to negative or vice versa). The loop start page and the cycle at the end of the original sample should be roughly the same reversed and inverted as when unaltered (e.g. a sine wave) for smooth transitions. Bidirectional looping depends upon how close the loop end is to the loop start and the abruptness of the change in direction.

To illustrate the memory choices, consider this example: a sample is made with one cycle per page over the entire 256 pages. A suitable loop point is located at page \$40; an acceptable sample end page is found at \$8F. The sample will be modified so that \$00-\$3F is the beginning, \$40-\$8F is the forward part of the loop, and \$90-\$DF is the backward part. Note that the original sample after page \$8F is discarded to

make room for the bidirectional loop. The procedure is to rotate the sample so that page \$40 begins on a zero crossing, verify that page \$8F ENDS on a zero crossing, and check that \$40 and \$8F are roughly the same when reversed and inverted. Pages \$40-\$8F are copied to \$90-\$DF, then the copy reversed and inverted. The loop start page is \$40, loop end page is \$DF, and loop end fine adjust is \$FF. The wavesample end (#61) can be lowered to \$E0 (but not lower!) if desired.

Figures 6-9 are plots of a string machine sample that has been bidirectionally looped. Figure 6 is the loop start page and has been rotated to line up a zero crossing. Figure 7 is the end of the original portion and ends close to a zero crossing. Note that the waveforms in Figures 6 and 7 would look similar if reversed and inverted. Figure 8 is the page just after the one in Figure 7 that is the beginning of the backward portion of the loop. It is really nothing more than a reversed, inverted copy of Figure 7. The loop is constructed so that the sample moves directly from Figure 7 to Figure 8. Figure 9 is the end of the backward portion of the loop. Once the waveform reaches the end of Figure 9, it jumps back to the start of Figure 6 to the beginning of the forward portion of the loop. Got that? This loop isn't particularly great, but I suppose it is useful. Look at the figures and see for yourself as to how abrupt these transitions can be. It turns out that bidirectional looping - at least as described here - is not overly useful. However, by describing this method, I've laid the groundwork for explaining some even more involved methods.



Next time: crossfade looping.

*Bio: Walter Daniel does his sampling in the Hanover, Maryland area. His Compuserve I.D. is 75066,164.*

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# MONSTER DAN SEQUENCES

By Rick Hall

FOR: ESQ-1.  
PRODUCT: ESQ-1 Sequences - Top Forty Original.  
PRICE: Was (as reviewed) 3 titles/\$40. Now 1-2: \$25 ea, 3-9: \$20 ea, 10-24: \$15 ea, 25-49: \$12 ea, 50 or more: \$10 ea.  
FROM: Danlar Music, PO Box 973, Tualatin, OR 97062.

It had to happen sooner or later. It has been a little over a year since the introduction of the ESQ-1, the first practically available multi-timbral synthesizer/sequencer combination. In that timespan we have seen plenty of voice cartridges come onto the market, for better or worse, but now it appears that the point has been reached where enough ESQs have been sold to make feasible the next generation of peripheral, one which addresses the sequencing ability of the machine.

I am, of course, speaking of pre-programmed performance sequences, an idea whose time has apparently come. Danlar Music of Tualatin, Oregon has produced and is now marketing a series of Top-Forty songs and original compositions, formatted as data cassettes for the ESQ-1 sequencer. So far as I can determine, the Monster Dan sequences are the first of their kind to hit the market, although they certainly won't be the last. They are the brainchild of (Monster) Dan Bergstrom and (Technician) Larry Church.

Monster Dan sequences are available in three formats: cassette tape, Mirage disk, or Sound File for the Commodore 64. Patch data for the internal banks is provided for each song along with the sequence data. The sequences are designed to run on an ESQ-1 with expander cartridge - you MUST have the cartridge. Tracks in the sequences are assigned to percussion, using MIDI note number assignments to drive an external drum machine. Specifically, these tracks were designed to be used with either a Roland TR 505 or an Oberheim DMX, and the MIDI note numbers used correspond to the default settings of those machines. Actually, any MIDLed drum machine whose note numbers are assignable will work -- simply re-assign the instruments to the proper note numbers, which are listed for you in the instruction sheets provided.

There are actually two different products being marketed here simultaneously -- the original instrumental music created by Bergstrom, and the Top Forty cover material. I received examples of both to review for this article, but since the applications of each differ so greatly, I will deal with them separately.

Marketing original material as sequence data for the ESQ is indeed an innovative concept, but seems to me to be a rather round-about, not to mention limited, device for getting one's music to the public when compared with more traditional methods. After all, how many people are there out there who own an ESQ and a drum machine, compared to the numbers of folks who buy records, who would be willing to fork over up to \$25 per tune for the privilege of hearing Dan Bergstrom's instrumentals played through their Peavey keyboard amp? The tunes are not bad, and I am by no means knocking Monster Dan's abilities as a composer, but it looks to me that if his stuff is really that fabulous (and it would have to be to get anyone to participate in the above scenario) I would think that obtaining a record contract would be, shall we say, a more realistic alternative. The Danlar promotional material shamelessly hypes Bergstrom's musical prowess, and there seems to be a real expectation here that legions of fans will sprout up to support this proposition. Well, who knows? Wilder things have happened... But in the real-life music business such conceits generally meet a swift and brutal rectification.

The publishing of Top Forty hits as sequence data, however, is a very different matter, and the profound consequences of the

introduction into the marketplace of this kind of product cannot be so easily dismissed. Already there are thousands of MIDLed-up musicians out there using sequencing in their stage acts on a nightly basis, and despite the railings of musical elitists who deplore this practice on the grounds that it's "not really playing...", automated performance is here to stay. We're not going to lose our ability to compose and play our instruments simply because machines exist that can also do these things. The purpose of a tool is to extend human ability, and since talent is a commodity dealt out in varying degrees, why not welcome any tool which allows the expression of creative impulses which might otherwise never be heard? That's what art is all about, isn't it?

Now, imagine, if you will, the singer who aspires to make a living at performance, but whose instrumental skills are marginal to zilch. And suppose this same musician is unable to find a skilled accompanist, and is low on funds to boot. Not an uncommon situation, to be sure. Well, supposedly, for the price of an ESQ-1, a Roland TR505, and a few dozen Monster Dan Top Forty sequences, this person could be working your local lounge scene, and sounding great, virtually overnight. I say supposedly, because it's not really quite as simple as all that. If you want to use these sequences as your sole accompaniment, then you're going to have to be willing to do some preliminary work.

Most of the Monster Dan sequenced songs, you see, use up a considerable amount of sequences. For example, I looked at HIGHER LOVE by Steve Winwood, which occupied sequences 18-30, HIP TO BE SQUARE by Huey Lewis and the News (seqs.1-13), CONTROL from Janet Jackson (seqs.1-22), and LA ISLA BONITA from Madonna (seqs.1-18). You don't have to be a math whiz to perceive that you're not going to have more than two of these babies sitting in your machine at any one time. So, some intelligent editing on the user's part is required, and indeed this is what is intended by the authors, who have formatted the songs by sequence into their basic structural parts -- intro, verse, chorus, bridge, etc. Many of the sequences are duplicates, with subtle changes written in (horn or drum fills, for example) to distinguish, say, the first verse from the second. Depending upon the amount of songs you wish to cram into the ESQ's 10,000-note memory, you will have to decrease the diversity of your songs accordingly by deleting these parts, which could make for some pretty repetitive and potentially uninspiring performances. Each song also has its own set of patches, and these would have to be similarly re-arranged into convenient banks, a job which is complicated by having to figure out the program positions in the banks relative to the tracks. Realistically, I still don't see how you can get away without having to dump in new data several times per set, which through cassette interface (which is what you are using if you are the poor soul depicted above) is both time-consuming (anywhere from two to four minutes for a full load) and unreliable. Since you can't play the ESQ while it's loading up, better have a pretty extensive collection of jokes on hand...

The only other solution is to carry a computer (the C-64 is not noted for its road-worthiness, by the way) or a Mirage, which of course adds greatly to the cost of your set-up. And speaking of cost, it should be mentioned that the sequences themselves aren't exactly cheap, although it is arguable that given a fast enough data transfer system you could land a good enough job to justify the initial expense, which for a minimum 32 songs (4 eight-song sets) would come to approximately \$400. That is conceivably a fair price to pay, given the tremendous amount of work involved in producing the product, not to mention the licensing fees involved. My suspicion, however, is that Danlar

should be ready to deal with the inevitable piracy that will occur due to the fact that it is impossible to copy-protect the data.

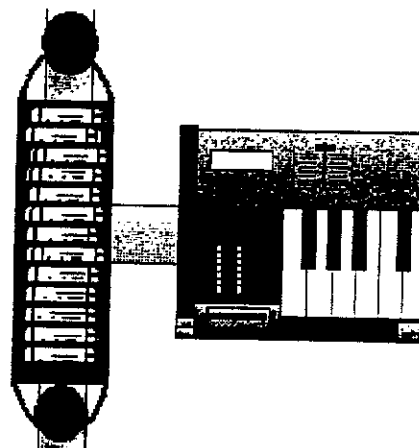
Keep in mind that the situation could literally change overnight. The advent of an ESQ with a built-in disk drive, or an Eprom that saves sequences (Ensoniq, are you listening?) would go a long way towards making this whole concept more feasible. But for the present we have what we have, and I for one would need to be looking at a pretty lucrative club gig to persuade me to shell out that kind of money up front.

The material itself, however, is very good. All of the sequences I listened to, both original and cover, were carefully crafted and tweaked down to a tee. The cover tune arrangements are credible imitations of the recordings they emulate, and full use is made of the ESQ's multi-timbral capacity. Bergstrom's usage of the great sounds in the TR505 was particularly impressive, and Church has contributed many fine original patches to the project, showing himself to be no slouch as a programmer. I was disappointed with the use of the annoying REED sound and its various derivatives to emulate a saxophone (it's not even close) but overall I'd say that these guys are definitely producing a quality product. If they can stay in business long enough to conquer the data transfer time factor (which of course doesn't eliminate all potential customers), they may well get rich. In any event, they deserve credit for seizing the opportunity presented by a machine such as the ESQ-1, and for pioneering a concept which could quite possibly open up avenues of performance for musicians who would not otherwise have the chance to be heard.

*Bio: Rick Hall is a Philadelphia-based composer, musician, and all-around bon vivant. He spends considerable time "drowning in spaghetti" in his own chord-entangled home studio, and has recently had the audacity to form his own music publishing business.*

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# VIDEO: M.U.G.'S MIRAGE TECHNIQUES, VOLUME 1

By Jordan Scott

FOR: Mirage.  
PRODUCT: Mirage Techniques Video Tape, Volume 1.  
PRICE: \$19.95 M.U.G. members, \$29.95 non-members. Shipping \$3.  
FROM: M.U.G., G-4 Productions, 622 Odell Ave., Yonkers, NY 10710.

Psst....you, that's right, you! I mean you over there with that confused look on your face. I bet you have a case of Mirage phobia. You know, that's when you've had your brand new, high tech sampling keyboard for a few months and you still can't figure out the darn thing. Don't worry, you're not the only one that just loads the Mirage with those great factory sounds. You say you'd really like to edit those EG's, decrypt the tomb of the mysterious Top Key, and at the same time become a sampling giant. Well, help is on the way if you have a VHS or Beta video system. Now the Mirage is the star of its very own video (rated PG and not to be seen on MTV for a couple of months). It comes from the Mirage User's Group (M.U.G.) and co-stars the group's operator Gordon Gebert as your guide to the Mirage.

MTV jokes aside, if you expect an expensive looking and highly produced video, you'll be very disappointed. The 60 minute (approximately) production was shot at a Westchester, New York cable facility and looks like an amateur cable TV show rather than a network quality program. I have no complaint with keeping costs down for a modest production, but then special attention must be paid to program content and organization. Unfortunately, this video doesn't have a handle on either aspect. However most viewers will probably not care about the editing glitches, the lack of formal scripting, bad takes, noisy audio, and other technical complaints because despite these obstacles, you still get to see someone explain and do Mirage programming operations. And that's what this video is about.

**STRUCTURE.** The video is divided into the seven segments listed below, with each one covering an area of Mirage programming operations. Throughout the video, simple but effective graphics show the parameters being manipulated by Gordon. As Gordon raises the value of the filter and amplifier EGs, you see the graphic for parameters 40-44 and 50-54 superimposed over the video shot of Gordon punching up the numbers on the Mirage keypad. One great thing about VCRs is the ability to stop or rewind as needed. I'd suggest that Mirage newcomers change the parameters along with video to reinforce the manipulations presented. To that end, it's a pity that Gordon didn't choose to edit a basic sound like the acoustic piano sample which everyone has and could compare their results to those on the video.

**FILTER AND DCA SEGMENT.** It's disappointing that in the time Gordon took to discuss filter parameters and its EG and the DCA EG, he failed to really explain what they do. When discussing filter sustain (P43) he says, "43 is your sustain, this has to do with your filters". This does not explain that this parameter determines the level at which the filter will remain open while a key is held. When mentioning filter release (P44) Gordon mentions that it "coincides" with DCA release (P54). This is very true, but he doesn't add that all filter envelope parameters are affected by the related amplifier envelope levels. It is also disappointing that there is no discussion of the EG modulation abilities of the Mirage EGs (P45-49 and P55-59). These parameters are crucial in simulating the response of acoustic instruments. On the other hand, this segment does show where some important functions are. For the beginner, this visual information may be enough to encourage further experimentation. That can only be a good thing.

## GENERAL KEYBOARD AND SEQUENCER SEGMENT.

All the basics are covered very well here including the master tuning functions, pitch bend, keyboard sensitivity, keyboard balance and keyboard link. This kind of video demonstration is great for the new purchaser as it saves a lot of head banging trying how to find out what your instrument does and where everything is. I love hunting for parameters, but for most, manuals are a bore. Stores selling Mirages might run this video as a demo for the instrument (they'd sell a ton of Mirages). The discussion of the sequencer covers the functions well and describes the overdub procedure. The graphic to describe overdubbing incorrectly says, "To overdub, press record twice". Gordon however describes the procedure correctly, saying "hit record, then hit play" as he efficiently zaps the Mirage keypad.

**TOP KEY SEGMENT.** The concept of hiding and uncovering wavesamples is one of the most complicated concepts to adjust to when dealing with a sampler for the first time. This segment provides good examples of lowering and raising top key values with emphasis on the importance of locating the particular sample to be edited.

## WAVESAMPLE PARAMETERS AND LOOPING SEGMENT.

This section covers the more important parameters needed when looping and altering sample markers. Wavesample start and end, loop start and end, and looping parameters are discussed as Gordon edits a jet take-off sound. During the edit, Gordon mistakenly reads hexadecimal values as "D-point-F" instead of just DF. When reading hex numbers, Gordon misreads the value cursor as if it were a hexadecimal point. I mention this to avoid further confusion, not to be picky. I like the fact that Gordon reminds the viewer to save samples to disk before wavesample manipulations. Some good examples of moving sample marker points and sample truncating are provided here, although Gordon incorrectly refers to truncating as "splicing" and "clipping".

**PROGRAM VARIATIONS SEGMENT.** Besides covering the basics of dual oscillator usage, mixmode operations, chorusing and detuning, this discussion shows how to vary programs for completely different sounds. Using initial parameter select (P27), we're shown how to shift between different wavesamples for what Gordon refers to as "multisounds in one bank". I am amazed that more folks don't use this function to its full advantage. Kudos to Gordon for pointing it out.

**WAVEFORM COPYING SEGMENT.** Since getting a computer for sample editing and other fun things, I've been spoiled by not have to deal with MASOS wavesample copy parameters 17 and 18. Gordon provides a good example of moving a bass sound from the upper to the lower keyboard using these functions. To many Mirage phobics, this segment will be worth its weight in gold. The example even shows what to do when the dreaded mnemonic CE appears in the display. After copying the sample, you're shown how to copy the programs from the upper to the lower bank.

**SAMPLING SEGMENT.** After a quick change of clothes and a new light blue backdrop in the studio, Gordon whips out a microphone and shows how to multisample (P77). His example of sampling speech (the numbers one, two and three) effectively shows how to allocate memory for each sample. Sampling, however, is a complicated and long subject, and the example here only skims the surface. It could take a whole video to show multisampling techniques for drums, strings and

other instrument families. At the least, I would've liked to have seen some sampling of synthesizers. In addition, the discussion on the basics of sample time adjustment, input filtering, and sampling threshold seemed unfocused and very sketchy.

**CONCLUSIONS.** There is nothing new here to recommend the video as a "must" purchase for the experienced Mirage user. The video is definitely aimed at the new owner who feels frustrated by the Mirage's intricacies. For this person, I believe several viewings might open up some secrets of the Mirage and encourage experimentation. At the end of the video, Gordon states this hope. Although Gordon won't win any MTV awards for the video, he is an effective presenter. His performance, however, is marred by the lack of organization. Many of the corrections I have pointed out are probably the result of Gordon forgetting what to say as opposed to him not knowing what to say. The video would greatly benefit from some editing to clean up the mistakes and to provide better transitions between segments. There are some nice touches on the video including a couple of nice operating tips, a couple of good M.U.G. sounds (in the future Gordon plans to add M.U.G. demo sounds at the end of the video), and an ode to E.L.P. at the end of the video. In these days with a new sampler coming out each month, this video represents the kind of user support that the Mirage has and the others don't. This isn't high tech video, but for the frustrated, it may be the ticket to getting more out of the Mirage.

*Bio: Jordan Scott is a studio/engineer at ABC Network in New York where he pushes buttons and edits tape. His introduction to electronic music occurred in 1981 at Syracuse where, while involved in TV-Radio studies, he wandered into the Crouse College Music Lab featuring Moog synthesizer modules, step sequencers and neon beer signs. Currently, he records stuff at home like everyone else in North America.*

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### MIRAGE PRODUCTS REVIEW VIDEO VOL. 2

A review of the following products on video:

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 Turtle Beach Softworks' *Vision* for IBM PC/XT, AT.  
 Blank Software's *Sound Lab* for Apple Macintosh.  
 Kaupass + Lemke *MUMEP/Oasis ST* for Atari ST.  
 Neo-Sync Lab's *Mirage-Aid* for Commodore 64/128 and Apple.  
 Black Squirrel Software's *MIDI Additive Software Synthesis* for Apple II.  
 Upward Concepts' *Multi-Temperament Disk and User Defined Micro-Tonal Scales*.  
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PERCUSSION

# THE PATCH BAY

Patch Reviews By Chris Barth

## VOICE CRYSTAL VOLUME 2

FOR: ESQ-1  
PRODUCT: Voice Crystal Vol. 2.  
PRICE: \$63.00 80-voice cartridge, \$16.00 40-voice cassette.  
FROM: EYE AND I PRODUCTIONS, 2151 Old Oakland Rd., #224, San Jose, CA 95131. (408) 943-0139.

Here we go again with a new volume of sounds programmed by Mark Wiens. Volume 1 of the Voice Crystal was one of my alltime favorites. While in hindsight it's not as innovative or experimental as what I've heard from Softworx and others, in terms of overall usefulness to the performing rock and roller, it's still one of the best set of patches available for fans of fat analog patches.

Volume 2 arrived in a translucent red cartridge. The housing is heavy plastic and appears reasonably indestructible. This is a great idea since the thin plastic housings used by others don't look like they would survive any rough treatment. A little red light glows to indicate power-on status when you insert the cartridge. Visually, the unit is a treat.

How do the patches sound? Well, most of them are great, a few are exceptional, and like last time, a few dogs are loose in the yard. First, the compliments: the five organ patches are really good. In particular, CATHEDRAL and CHURCH live up to their names. If you need some extra bucks, take your synth to church one morning, play these patches, and they'll hire you on the spot. There are two Hammond B-3 patches, with and without the Leslie rotating speaker sound, and they are very convincing. One unique sound is CIRCUS, which pretty accurately captures what I think is a calliope. As usual with Mark's stuff, the piano and keyboard patches are right on the mark. They can be played over the entire keyboard with your usual piano technique and they all sound great.

The howl in the collection is a split patch: BAGPIPES! I have never ever been a fan of this sound, but Mark has got it cold. It consists of a left split called LOWBAG and a right split called BAGPPS. The transition point between the two sounds is almost completely unnoticeable. If you sustain a root and a fifth with your left hand, an octave with your right hand, and play a slow droning melody with the middle fingers of your right hand while you sustain the octave with your thumb and pinky fingers, men in kilts will be all over you. God forbid that this kind of music ever catches on, but if you need this sound, Mark has got it. (Forgive me for digressing, but while I think of it, let me mention that if jazz is your thing, Nick Longo of Cesium sound has a patch, VIBES2, which is just as phenomenal in recreating a real-world sound).

As usual, the Moog patches are the best, anywhere. If you are a fan of the Moog sound, this volume, like the first one, is a must.

There are two special effects. WIND works well, and SURF is even better. Waves crashing against the shore - it's easy once YOU know the secret!

The drum patches are somewhat improved over Volume 1. There are three snares which sound especially good. I had great success mixing them in with my drum machine to get some new snare sounds. The RIMSHOT is useful and the

COWBELL works. The CONGA2 is not quite there unless you work with some delay and reverb. The steel drum patch is very effective; I'm surprised that everybody who tries programming this sound on the ESQ seems to catch it right away.

I must confess that the three electric guitar patches left me cold. There is an interesting sound, BAKWRD, which does what it says. However, BAKGTR starts to stretch it a little bit, by combining the uneventful guitar sounds with that gimmicky backward-sounding effect. I felt much more at home with MELBEL and MELBL2, which prove that thin, clear sounds can still hold some analog warmth.

Complaint Number 1: as usual, no performance notes. The COWBELL only works right if you hit the highest note on the keyboard; everywhere else, zilch (or is it "ugh"?). I tried lots of notes, but it wasn't until I spoke with Mark that I tried the right one. CYMBAL sounds like a hi-hat until you move the mod wheel all the way up; am I to try every combination under the sun to find the sound you named the patch after? Come on, guys! You spend all this time programming these sounds, and then you go home before explaining what you did and how we should use them.

Complaint Number 2: Spell out the patch names! What are we supposed to make of GTMLBL? It may be obvious to you, but I'm not your girlfriend. If I knew the full name, the abbreviation would make sense.

Complaint Number 3: Bad split/layer assignments are unforgivable! Not only can't I pronounce GTMLBL, I don't even know what it sounds like. The layer assignment picks up my internal voices and not any of the voices on the cartridge, and I forgot this question when I called Mark for some notes on the other patches. This same problem existed on Volume 1. It's really a shame that such a fine programming effort is marred by this sort of sloppiness, sort of like a drop of ink in a glass of milk.

While these complaints irk me, there's no doubt that as a collection, these patches are well programmed, fun to play, easy on the ears, and suited for most performing applications. And if bagpipes ever come back, you'll know where to look.

## MAARTISTS RAM CARTRIDGE

FOR: ESQ-1  
PRODUCT: MUSIC PACK.  
PRICE: \$99.95.  
FROM: Maartists, 383 Broadway, Jackson, KY 41339. (606) 666-5915.

Collecting your favorite ESQ patches is fun until you run out of places to save them. Do you erase marginal patches or invest in another cartridge? I don't use a computer in my home studio, and I haven't seen the IVM stand alone disk drive yet, so I answered the MAARTISTS advertisement for a 160 voice RAM cartridge. Forty patches are included with the cartridge. (TH - it now comes with 160 voices.) The MAARTISTS cartridge has a little plastic switch in the upper right corner which lets you toggle between two groups of 80 voices. The forty voices are duplicated four times, so every location has a

voice in it when you first use the cartridge.

When I got my synth in August of 1986, it arrived with a RAM (Random Access Memory) cartridge, but now they are being shipped with a ROM (Read Only Memory) cartridge instead. This difference is an important one; you can't edit voices retrieved from a ROM cartridge and save them to the same ROM cartridge.

There's not much to say about the MAARTISTS cartridge itself, other than it has been working fine for me since I got it. In any case, it comes with a one-year warranty. If you play live and have a group of voices that you need to access quickly, this cartridge is a bargain compared to ROM cartridges. The latter are cheaper to purchase initially, but since at a minimum you'll usually want to edit the patches to change volume levels, you'll have to save the edited patches elsewhere. I'm using the MAARTISTS cartridge to save voices which I retrieved from other cartridges or loaded from data sheets like the ones which appear in Hackerpatch.

The real surprise was the quality of the forty patches included with the cartridge. There are no special effects and no "unusual" patches. Instead, MAARTISTS offers what I would call "the rock and roller's lead synth assortment". Many professional musicians use the ESQ for solos in rock and roll bands, and we all know that lots and lots of the patches offered for sale by Ensoniq and other third party developers are not well suited for this context. I've received some patch collections for review where literally none of the voices were suitable for top 40 and rock and roll songs. In contrast, the MAARTISTS cartridge seems ideally suited for the performing rock and roller. I spent an afternoon jamming with my usual band of crazies and the MAARTISTS collection was a big hit. Most of the voices are named SYN 1, SYN 2, SYN 3, etc. The closest patch on the

factory presets would be SYNLED; but these offer wide variations on that sound with lots of different colors and motion. They really sound like lead synthesizer voices. Very rich, very fat, very analog. Out of forty, I thought ten or fifteen were right on the mark for screaming rock band solos, and almost all were usable. This is a REALLY good percentage. Most patch collections try to cover all the bases by including all possible types of sounds which I think is a marketing mistake. I don't know many musicians who want or need this sort of variety. Rock and rollers don't need the clarinet patches, jazz musicians don't need the space music patches, and composers of electronic music aren't using the Fender Rhodes imitations. (I assume it's them demanding all these Koto patches, right?)

Instead of offering a limited selection among different categories of sounds (special effects, synthesized spacey sounds, fat analog sounds, imitations of acoustic instruments), why not offer a more useful collection of voices in just one category? This is what MAARTISTS is offering the rock and roller. Frankly, when I first started playing the ESQ, I was looking for an 80's version of the Moog synthesizer, and it's taken a year of reviewing hundreds of ESQ patches to come up with a decent top 40 and rock and roll collection. If I had heard the MAARTISTS voices back then, I might not be writing this review now.

*Bio: Chris Barth writes and produces his own top 40 demos in his MIDI home studio using an ESQ-1, a Kawai R-100 drum machine, various guest musicians and signal processors. He played bass in nightclubs for 6 years before getting his law degree. Working hours are spent pension consulting for a firm whose clients include several famous jazz musicians. Chris knows the words and music to all the songs recorded by Paul Revere and the Raiders. ■■*

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# MINOTAUR STUDIOS DISKS 2 AND 3

By Persis Ensor

FOR: Mirage  
PRODUCT: Disks 2 and 3  
PRICE: \$20 for one, \$100 for seven  
FROM: Minotaur Studios, 4 College St., Canton, N.Y. 13617

Minotaur Studios has produced a range of historical instrumental sounds for the Mirage, from the rebec and vielle to the dulcimer and string quartet to the RMI electric piano of the 60's. There are seven disks in the series. I only had access to disks 2 and 3 for this review.

My own field is medieval and renaissance music, teaching and performing on many instruments including the lute, recorder, vielle, rebec, harp, voice, krumhorn, viola da gamba and harpsichord. It is difficult for me to sit at a keyboard and think I am playing a harp, without having some sense of the plucking of the strings. It would be the same for blowing a recorder or bowing a vielle.

The Minotaur disks give me a good sense of some basic sounds of the original instruments, except for the vielle which is unusable. There is also a fun contemporary program (L4 & U4) for each sample. The sequences are excellent examples of music appropriate to each instrument. There is uneven playing for some of the sequences, but it is very difficult to play the Mirage keyboard evenly.

All the sounds on both disks have problems with the filter envelope staying around after release of the key. Sound has three parts: the attack, the duration and the release. If all of these parts are not true to the original instrument, then the sample is not a valid representation of the instrument. In addition, it is important that the instrument being sampled is played by an experienced musician. Just having a good instrument to sample is not enough.

The other problem I have with all the samples is that each octave of a sample has a very different sound. On some samples, for instance the krumhorn, there is one octave that is good, with the rest of the keyboard having some problems. In dealing with these early instruments, it must be noted that the range of, say, a medieval recorder is only one and a half octaves, so the sound is not viable outside a three octave range for a set of four recorders.

Disk 2 has a medieval celtic harp, a vielle and a clavichord. The harp is very good if you play the keys abruptly (staccato). This takes care of the filter envelope problem. L1 & U1 and L3 & U3 for the harp are the best. The vielle sound is not at all the sound of its namesake. These old instruments may seem crude in design compared to the modern instruments, but the sound is not this crude. The sequence shows up all the sound problems in the sample, although the music itself is fine.

The third sample is of a clavichord. I was not aware that the "clavichord" on other synthesizers was not the historical clavichord until my husband, Dick Lord, showed me several samples from his synthesizers. Minotaur has produced quite a good historical clavichord, especially around the pitch of middle C on L3 & U3 of the clavichord. Unlike the harp, it is best to hold down the keys (legato) to avoid hearing the filter envelope.

Disk 3 has a renaissance pipe organ, a harpsichord and krumhorns. The organ sample has a harsh sound in the top octave compared to the rest of the keyboard, with obvious changes between octaves. The sound (duration) is quite fine, but you do have to put up with the filter envelope after the release of the key.

The harpsichord sample lacks the warmth of a good harpsichord and the sound decays much sooner than a good

instrument. Why have velocity sensitivity on the harpsichord? The historical harpsichord, like the pipe organ, should not change volume with the key velocity. L2 & U2 on the harpsichord sample is the most usable, but I really don't feel this is the best sampled harpsichord sound I have heard. I go for the contemporary sound on L4 & U4 myself and forego authenticity.

The best for last - the krumhorn. This would make a great regal organ sound, and krumhorns played together sound much as a regal does. It is too bad the upper two octaves are at a lower pitch than the rest of the keyboard. The best sound is below middle C, but I would like to have this sample do away with the velocity sensitivity also, to give a more true krumhorn sound.

Minotaur Studios has done well to produce samples of a great variety of early and modern instruments. I hope Minotaur will continue to refine their samples to imitate the playing of the instruments, not just the sound. I look forward to hearing the other Minotaur disks.

*Author's bio: Persis Ensor is an award winning lutenist, singer and a skilled musician on many instruments. She is director of The Renaissance Workshop Inc. She performs solo lute-song concerts, is co-director of Historical Music and Dance of NH and tours nationally with a group she directs called The Renaissance Consort. Persis teaches privately, travels nationally giving workshops, is guest artist with many ensembles and is the editor of medieval and renaissance music publications. ■*

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# THE HAPPY HACKER

## DIAGNOS: A NEW MIRAGE OPERATING SYSTEM (PART 2)

By Steven Fox

Last month I went through the basic routines to read the keypad, the keyboard, the sustain pedal, the mod wheel, the pitch wheel, and also how to light up the LED display. This month you can make use of all these routines in the new Mirage operating system, DIAGNOS. DIAGNOS is a simple diagnostic test program for the Mirage. It will test all the mechanical parts of your Mirage and give you a readout on the LED display.

First you need to enter the listing. You are going to need a Mirage monitor program to do it, though. Either LEAPING LIZARD'S Mirage Monitor V1.0 for the C-64, or UPWARD CONCEPTS' Monitor Disk, will do. If you don't have a Mirage monitor, at the end of this article I'll tell you how you can order a copy of DIAGNOS directly from me.

Because of the size of the program, it is a lot easier to enter it by typing in the hex values rather than assembling each instruction. That is the way it is listed here. If you want, you can disassemble it after you have entered it all into memory. It should take you about half an hour to enter the program.

The program comes in two parts, Part 1 (8008-8057) contains the code which automatically starts the program once it's loaded from disk. Part 2 (8100-82FF) is the actual program.

Before you enter the listing, use your monitor program to FILL memory between \$8000 and \$BDFF with 00.

When entering the listing, if you're using my monitor program, LEAPING LIZARD'S Mirage Monitor V1.0, you can enter the hex bytes, eight at a time, exactly as they are listed here. If you're using UPWARD CONCEPTS' Monitor Disk, you should enter the hex bytes one at a time using the "M" command.

### DIAGNOS

#### (Part 1)

```
..:8008 7E 80 48 7E 80 48 7E 80
..:8010 30 00 00 00 00 00 00 00
..:8018 00 00 00 00 00 00 00 00
..:8020 00 00 00 00 00 00 00 00
..:8028 00 00 06 14 87 00 00 00
..:8030 10 CE BF 80 1A 50 86 E8
..:8038 1F 8B 86 7F B7 E2 0E 86
..:8040 03 B7 E1 00 7E 81 00 12
..:8048 86 7F B7 E2 0E 86 03 B7
..:8050 E1 00 3B 00 00 00 00 00
```

#### (Part 2)

```
..:8100 CC 02 02 FD 00 00 17 01
..:8108 3C 17 01 64 81 80 26 07
..:8110 17 01 8D 8D 4B 20 F9 81
..:8118 46 26 07 17 01 92 8D 40
..:8120 20 F9 81 40 26 02 20 58
..:8128 81 81 26 02 20 6C 81 43
..:8130 26 03 16 00 80 81 41 26
..:8138 03 16 00 94 81 82 26 03
..:8140 16 00 B4 7E 81 00 00 00
..:8148 00 00 00 00 00 00 00 00
..:8150 00 00 00 00 00 00 00 00
..:8158 00 00 00 00 00 00 00 00
..:8160 17 00 BD 17 00 DA 17 01
```

```
..:8168 07 81 87 27 01 39 17 00
..:8170 FF 81 00 26 F9 35 10 7E
..:8178 81 00 12 12 12 12 12 12
..:8180 CC 00 00 FD 00 00 17 00
..:8188 C7 C1 90 26 09 17 00 C0
..:8190 12 12 8D CC 20 F0 8D CB
..:8198 20 EC CC 00 00 FD 00 00
..:81A0 17 00 AD C1 90 26 0A 17
..:81A8 00 A6 17 00 A3 8D B1 20
..:81B0 EF 8D B0 20 EB CC 00 00
..:81B8 FD 00 00 17 00 92 C1 80
..:81C0 26 0A 17 00 8B 17 00 88
..:81C8 8D 96 20 EF 8D 95 20 EB
..:81D0 CC 00 00 FD 00 00 17 00
..:81D8 77 C1 B8 26 0B CC 3A 2A
..:81E0 FD 00 00 17 FF 7D 20 EE
..:81E8 C1 B9 26 06 CC 3A 8E FD
..:81F0 00 00 17 FF 6E 20 DF CC
..:81F8 00 00 FD 00 00 8D 71 12
..:8200 1F 89 C1 00 27 F7 C1 87
..:8208 27 06 8D 14 8D 32 20 ED
..:8210 8D 0E 17 00 5B 81 00 27
..:8218 04 8D 25 20 F5 7E 81 00
..:8220 1F 98 44 44 44 44 84 0F
..:8228 C4 0F CE FB 4D A6 C6 E6
..:8230 C5 FD 00 00 39 12 12 12
..:8238 12 12 12 12 12 12 12 12
..:8240 86 80 B7 BF 86 FC 00 00
..:8248 BD F3 3F 39 12 12 12 12
..:8250 10 8E 00 10 BD F0 A7 F6
..:8258 E2 0A B6 E2 0C 84 FD B7
..:8260 E2 0C 8A 0E B7 E2 0C 39
..:8268 12 12 12 12 12 12 12 12
..:8270 7F B8 00 B6 B8 00 8A 18
..:8278 B7 E2 01 B6 E2 01 43 84
..:8280 E0 26 0F 7C B8 00 B6 B8
..:8288 00 81 08 27 02 20 E7 86
..:8290 00 39 BA B8 00 39 12 12
..:8298 12 12 12 12 12 12 12 12
..:82A0 B6 E2 00 84 FB 8A 08 B7
..:82A8 E2 00 F6 EC E2 39 12 12
..:82B0 B6 E2 00 8A 0C B7 E2 00
..:82B8 F6 EC E2 39 00 00 00 00
..:82C0 20 20 20 20 20 20 20 20
..:82C8 44 49 41 47 4E 4F 53 20
..:82D0 20 20 20 20 20 20 20 20
..:82D8 43 4F 50 59 52 49 47 48
..:82E0 54 20 28 43 29 20 31 39
..:82E8 38 37 20 42 59 20 53 54
..:82F0 45 56 45 4E 20 46 4F 58
..:82F8 20 20 20 20 20 20 20 20
```

Now that you've entered it all, you have to save it to disk. You will be saving it as an operating system. Use either a newly formatted disk, or a disk which you don't care if you over-write the current operating system.

If you are using LEAPING LIZARDS' Mirage Monitor V1.0, use the SAVE O.S. command, "^AS". If you are using UPWARD CONCEPTS' Monitor disk, first relocate the code to \$1000 so it can be saved to disk. Use the command, "X 8000-82FF 1000", to relocate. Now use the command, "W 00 00", to save the code to disk.

Now cross your fingers and switch your Mirage off, then back on. DIAGNOS will be loaded back in and you will see a flashing "--" in the display.

## USING DIAGNOS

The flashing "--" indicates that the program is waiting for you to press a number on the Mirage keypad between 1 and 7. The following functions can be selected:

- "1" = CHECK PITCH WHEEL
- "2" = CHECK MOD. WHEEL
- "3" = CHECK KEYBOARD NOTE #'S
- "4" = CHECK KEYBOARD ATTACK VELOCITY
- "5" = CHECK KEYBOARD RELEASE VELOCITY
- "6" = CHECK SUSTAIN PEDAL
- "7" = CHECK KEYPAD

All functions can be exited by pressing "CANCEL". You will return to the flashing "--" display.

"1" = CHECK PITCH WHEEL - The pitch wheel has a range from 00 to FF. It normally sits at 80.

"2" = CHECK MOD. WHEEL - The modulation wheel also has a range from 00 to FF. It normally sits all the way down at 00.

"3" = CHECK KEYBOARD NOTE #'S - The keys spread from 00 at the lowest C note to 3C at the highest C note. These values do not correspond to the MIDI note values.

"4" = CHECK KEYBOARD ATTACK VELOCITY - The keyboard attack velocity ranges from 01 to 7F.

"5" = CHECK KEYBOARD RELEASE VELOCITY - The keyboard release velocity also ranges from 01 to 7F. You will not get a reading until you release a key.

"6" = CHECK SUSTAIN PEDAL - The display will show "on" when the pedal is pressed, and "oF" when the pedal is released.

"7" = CHECK KEYPAD - The actual value of the button (as the Mirage sees it) will be displayed as long as you hold it down. Refer to Part 1 for a table showing the values and locations of each button on the keypad. After pressing "CANCEL" you will return to the flashing "--" display.

So, what good does this do? Well, I now know that none of the buttons on my keypad are sticky. My sustain pedal works fine. All the keys on my keyboard work, although as hard as I try, I can't get an attack or release velocity reading higher than 7D, but that's no big deal. I now know that my pitch wheel is actually centered at 7E and my mod wheel only has a range of 00 to CA. I had already suspected this. Since I'm taking my Mirage in for repair this week, I'll have the guy fix my pitch wheel and mod wheel while he's at it. I'll give him a copy of DIAGNOS, too.

For those of you without a Mirage monitor program, and who want a copy of DIAGNOS, you can order a copy directly from my company. It's a slightly updated version and it'll cost you \$24.95 (+ \$2.50 shipping) for a disk with the DIAGNOS operating system on it, plus some instructions about how to use it. Write to, LEAPING LIZARDS, 10026 36th AVE NE, Seattle, WA 98125.

By the way, you can easily make a copy of DIAGNOS for your friends who don't have a Mirage monitor. Simply copy it over with your favorite disk utility.

I'd like to make an amendment to my previous article - DIAGNOS Part I. In Part I, I explained how to read the Mirage keyboard. Well, it turns out that the routine I used was not quite correct. It worked fine in DIAGNOS, but in other

applications the routine was flawed. While the differences are subtle, the following routine will read the keyboard correctly:

```

.. 5300 B6 E2 0D      LDA $E20D
.. 5303 84 04         ANDA #$04
.. 5305 27 F9         BEQ $5300
.. 5307 B6 E2 0C      LDA $E20C
.. 530A 84 FD         ANDA #$FD
.. 530C B7 E2 0C      STA $E20C
.. 530F 8A 0E         ORA  #$0E
.. 5311 B7 E2 0C      STA $E20C
.. 5314 F6 E2 0A      LDB $E20A
.. 5317 39            RTS

```

The above routine will wait until a key is pressed, then load its value into accumulator B.

Furthermore, to make things even more complicated, before you can begin reading the keyboard you have to initialize it once at the beginning of your program using the following:

```

.. 4000 B6 E2 0C      LDA $E20C
.. 4003 84 FD         ANDA #$FD
.. 4005 B7 E2 0C      STA $E20C
.. 4008 8A 0E         ORA  #$0E
.. 400A B7 E2 0C      STA $E20C
.. 400D B6 E2 0A      LDA $E20A

```

*AUTHOR'S BIO: Steven Fox has been a professional personal computer utilities programmer for several years both in the US and England. His latest venture is LEAPING LIZARDS, which he co-founded with his girlfriend, Cara Villalobos. They sell computer software and trendy jewelry. ■*

## Attention all ESQ-1 & Mirage owners!

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# AN INTERVIEW WITH ENSONIQ'S PRESIDENT - BRUCE CROCKETT

By Dean Grosshandler

*What would you do if you had the opportunity to talk with the president of Ensoniq?*

*There I was, at the opening of Ensoniq's branch in Tokyo this summer, waiting for the exhibition room to open. I had been negotiating with Kagami-san, who was to be the branch manager, and he had invited me to the opening. Yes, I had the yen to buy an ESQ-1, but he didn't want the money. "I'm sorry, Dean-san, we're getting a shipment of ESQ-1s very soon and we're opening the branch office soon, so let's talk then, okay?"*

*Okay, so I waited. Opening day finally arrived. Dreaming of the musical heights I would climb with my new synth, waiting outside of the room where the opening celebration was about to begin, ambitious thoughts raced through my impatient mind. "I'm the only foreigner here. What a crime to leave the rest of the English-speaking world in the dark!" And when Mr. Bruce Crockett, the president of Ensoniq, entered the waiting area and shook my hand, my fate was sealed. "Yes, I'll write an article for the Hacker! And, now that I'm the Hacker's Tokyo correspondent, I have the credentials to interview even the president." So I did. Mr. Crockett was gracious and patient with my lack of experience. And, dear reader, please remember that I went to Tokyo to buy a synthesizer, not to write an article. I took a pad of paper with me as an afterthought, but that was all. Thus, I have had to reconstruct the conversation from my notes. There were no fancy cassette-corders involved in this production. The words that follow are not quotes, but they retain the meaning of the actual conversation.*



Ensoniq Corp President, Bruce Crockett (left) and Ensoniq Japan general Manager, Yoshitaka Kagami announce the opening of Ensoniq Corp's new sales office at a press conference in Tokyo.

**Your Man in Japan:** You were originally with Commodore?

**Crockett:** Yes, I was the director of world-wide manufacturing. Before that I was the operations manager for the opto-electronic division at Fairchild.

**YMIJ:** I heard that Ensoniq started with only three partners.

**Crockett:** Yes, they were Bob Yannes, senior designer, Al Charpentier, vice-president of engineering, and I. You know, my partners are responsible for selling more computers than anyone else in the world. Bob built the VIC 20 at home and he and Al designed the video and sound chip for the Commodore 64.

**YMIJ:** How many did the Commodore sell?

**Crockett:** About six million.

**YMIJ:** When did you create Ensoniq?

**Crockett:** We started in September of '82. In our first year, we developed an add-on for a game computer for Atari. In the summer of '83, we started working on a custom chip for music.

**YMIJ:** The Q chip? [And I hadn't done any research. Wow...]

**Crockett:** Yes. We got the name for it from the last letter of "Ensoniq." Both "Ensonic" and "C chip" looked funny.

**YMIJ:** What's your capacity for producing keyboards now?

**Crockett:** Right now, our capacity is 5,000 keyboards a month. Robin Weber is in charge of marketing.

**YMIJ:** During the press conference at the opening, it sounded like the Japanese reporter was asking if you were deliberately restricting your exports to Japan. What was that all about?

**Crockett:** Actually, he was asking about upgrading our products. I explained that in the old days, with analog synthesizers, it was easy to upgrade. But now, because today's keyboards are so advanced and the market is so tough, we have to design a new chip and create new sounds. Look at Yamaha -- how many DX7 upgrades have you seen for Yamaha? And it's a 2.3 billion dollar company. We've got eight software engineers, five chip engineers... We have 22 engineers out of a total of 164 employees. And you have to make a whole new case --

**YMIJ:** Was the Mirage so successful that you didn't need a successor?

**Crockett:** We started with the idea of making a product with a life-span of about two years. As soon as the Mirage was completed, we started work on the ESQ-1.

**YMIJ:** Why do you think the Mirage was so successful?

**Crockett:** Well, it was very innovative at the time. Also, there was a lot of support for new sounds, the price was low, there were third-party developers, and, of course, there was the Hacker.

**YMIJ:** Yeah, it's been indispensable to me. And you have your dealer network, too. How many dealers do you have outside of the United States?

**Crockett:** We have about 300 dealers in Europe, 25 in Australia, and 7 in New Zealand. Also, people think of Europe as Europe, but you have to sell to Germans, not to Europeans.

**YMIJ:** How does the market here in Japan differ from the US market?

**Crockett:** One big difference is that US stores discount heavily. They don't in Japan. Ensoniq started with limited distribution in the US, about 300 storefronts, and we created an excellent sales course for our dealers. Every week we have 6 dealers come to our plant for a three-day course. And we have excellent customer service -- we often have other

companies' customers call us for help!

**YMIJ:** Will you apply a similar strategy in Japan?

**Crockett:** Not exactly. But we want to be sure of good service. That's the most important thing. It's not a sale until it's in the hands of the musician -- otherwise, the synths will just come back to us. I don't know the Japanese market that well. There are a lot of low-priced synthesizers out there. Each is good, but the manufacturers have to differentiate between them. That's where Ensoniq has done well. First, we came out with a low-cost sampler, and then we came out with digital wave synthesis and a powerful sequencer in one package.

**YMIJ:** What's ahead for you in Japan?

**Crockett:** The ESQ-1 is different. It has an on-board sequencer, it's a MIDI controller, it has a wide range of sounds -- really, it's good for all ranges of musicians. Japan should be a good market.

**YMIJ:** Digital pianos really seem to be going over big in Japan.

**Crockett:** Well, I can only speak regarding the US, but people look at a piano as a piano and also as a piece of furniture. A piano in the US must look like a piano. The big question is, do people want a real piano or a home instrument that sounds like a piano?

**YMIJ:** Possibly digital pianos are doing so well because of the small size of Japanese homes.

**Crockett:** Also, there might be a greater number of possible keyboard players in Japan because of the music education

system. (Japan's elementary schools are quite different than the high schools, which form the basis of most Americans' impressions of the Japanese school system.)

**YMIJ:** How do you choose your dealers?

**Crockett:** Just in the normal ways: salesmen, financial record, etc. There's no significant difference between synthesizers and computers as far as that goes.

**YMIJ:** And how about choosing your employees?

**Crockett:** Ensoniq is really unusual in that regard. During our first year and a half or so we only had about 12 people, and, of course, we started with only the three principals. Now, we get many, many employment applications -- it's very difficult. At Ensoniq, we have a 77% staying rate.

\* \* \*

After talking with Mr. Crockett, I could see why. Folks, we not only have some great products on our hands, there seems to be a great company backing them up. Good luck, Ensoniq!

(Thanks to Mr. Kagami and his staff for their kind assistance in making this interview possible.)

*Author's Bio: Dean Grosshandler has very few professional credits. He studied music at the University of Chicago and will complete his Masters in Education there one of these days. Meanwhile, he's teaching English at a public high school southwest of Tokyo. Dean enjoys writing blurbs about himself for the Hacker. ■*

## Now how much would you pay?

Would you buy a disk drive that could quickly and easily store all of your sounds and sequences in one central location? Even if your synths, sequencers, and drum machines are all made by different manufacturers? What would you say if we told you that you could have such a device for only \$39.95? Well, if you own a Mirage, Mirage rack, or Mirage DSK, you can! The MIDICASTER is a new product for the Ensoniq Mirage that can turn your Mirage into a powerful MIDI storage device capable of saving programs, sequences and drum machine data directly to normal Mirage disks. MIDICASTER works with most popular electronic instruments that support system exclusive data transfer, and is exceptionally quick



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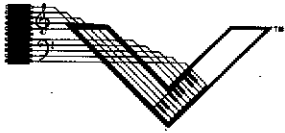
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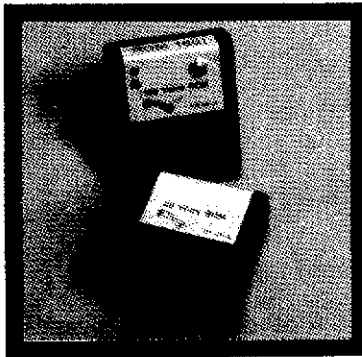
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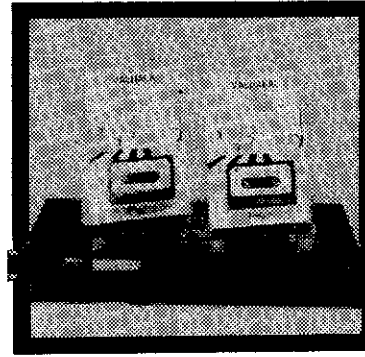
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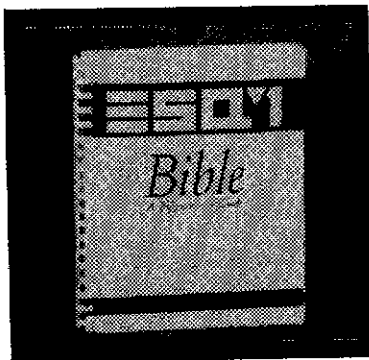
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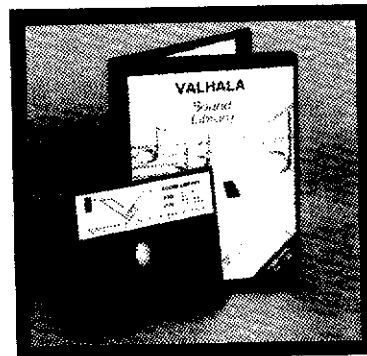
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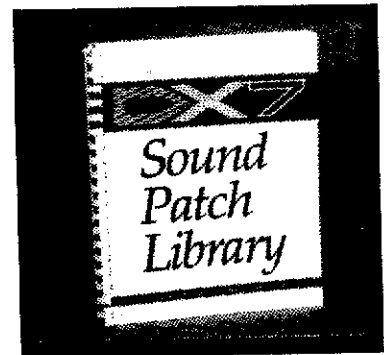
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## THE HACKING PART...

### MATRIX6 (by Doug Fietsch)

This is a very solid ANALOG BRASS sound, one that is very well done on all Oberheim synthesizers. The reason I have picked it is that the possible variations are limitless.

First try going to ENV4. Change T1 from 0 to 25. You now have a swelled brass sound. To further enhance this process select the FILTER and change MOD1 from ENV3 to ENV4 which will cause the filter to open at the same rate as the output attack. For a more dramatic effect, change MOD2's value from -31 to 0. To make it even brighter, change MOD2 from ENV1 to ENV4, and then change the value from 0 to anything up to 63.

Next, return to the original patch. You can experiment by turning off the individual DCAs. You'll find that they all have the same values except OSC1 and 2 are set for slightly different detunings. If you turn off DCA2 the overall sound is changed very little. There are lots of variations to be made with slight changes to OSC2 and DCA2.

With DCA2 turned on, change OSC2 FINE from 2 to 0. Go to OCT and step through its values noting which you like best. Now, select OSC2 WAVE and step through all possible waveforms. Try this with different OCT settings. With some of these waveforms, changes are not as obvious as with others. With the less obvious ones, you can bring them to the surface by turning down the DCAs controlling the brass sound. Go to DCAs 1 and 2 and lower the value of MOD1 [ENV2] as you like. Now you should be able to hear the more subtle waveforms.

Last, but not least, try selecting DCA2 and change MOD1 from ENV2 to ENV1. ENV1 has a much slower attack so now when you play a chord you'll have a quick but slightly quieter attack with OSC2 slowly billowing in afterwards. Since ENV1 is also controlling the FILTER more variations are possible. Select FILTER and turn MOD2 OFF! Things will be a bit brighter and, as OSC2 kicks in, more pronounced. Select ENV1 and change T1 from 34 to 20 which will speed up the arrival of OSC2. Set it to 40. This will exaggerate the swelling effect. Set L1 to 56. This will limit the volume of OSC2 so that at its final arrival it is consistent with the other two oscillators.

Finally, take all of these ideas and maybe try them individually and together. The combination of these few ideas with this one patch (MATRIX6) should yield hundreds of terrific variations.

Erick Hailstone  
The MIDI Connection

## THE PATCHING PART...

### PROGRAMS: GAMILN (with HRM2.5.8)

*By Paul Draper (The Red Box Recording Studio)*

This patch came about as a result of reading a Hacker article on additive synthesis on the ESQ-1 and cross-fertilizing these ideas with some interviews with Wendy Carlos; in particular, her ideas on the harmonic series and the way they are layered. Hence the use of sine waves giving the harmonics 2, 5, 8, 11, 15, and 17 to produce a "gamelan" patch.

### PROGRAM: BANJO

*By Erik Sherer*

Banjo is a simple patch that emulates the sound of a bluegrass banjo. The key to getting a banjo sound from this patch is to study the bluegrass banjo rolls that were pioneered by Earl Scruggs.

### PROGRAM: MATRIX6

*By Doug Fietsch*

Matrix6 kind of emulates the large Prophet5 - Matrix6 type of patch. It's sort of a general purpose brass sound.

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**ESQ-1 PROG GAMILN** BY: RED BOX RECORDING STUDIO

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	1	5	14	SINE	LFO1	3	OFF	0
OSC 2	2	1	1	SINE	LFO1	3	OFF	0
OSC 3	1	9	20	SINE	LFO1	3	OFF	0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	OFF	0	OFF	0
DCA 2	38	ON	ENV1	63	LFO2	-28
DCA 3	30	ON	ENV2	63	LFO2	32

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	75	24	50	OFF	0	OFF	0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	48	8	OFF	0

	FREQ	RESET	HUMAN	WAY	L1	DELAY	L2	MOD
LFO 1	5	OFF	ON	TRI	0	0	0	WHEEL
LFO 2	12	OFF	ON	TRI	0	0	0	WHEEL
LFO 3	62	ON	OFF	NOI	56	0	20	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	63	21	11	0	0	0	8	12	0	9
ENV 2	63	21	8	0	0	2	5	13	0	9
ENV 3	0	0	0	0	0	0	0	0	0	0
ENV 4	63	44	6	32	33	4	14	25	10	9

	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
ON		ON	HRM2.5.8			

**ESQ-1 PROG HRM2.5.8** BY: RED BOX RECORDING STUDIO

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	2	SINE	LFO1	3	OFF	0
OSC 2	0	11	30	SINE	LFO1	3	OFF	0
OSC 3	0	3	27	SINE	LFO1	3	OFF	0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	OFF	0	OFF	0
DCA 2	38	ON	ENV1	63	LFO2	-28
DCA 3	30	ON	ENV2	63	LFO2	32

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	127	0	50	OFF	0	OFF	0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	48	8	OFF	0

	FREQ	RESET	HUMAN	WAY	L1	DELAY	L2	MOD
LFO 1	21	OFF	ON	TRI	0	0	0	WHEEL
LFO 2	12	OFF	ON	TRI	0	0	0	WHEEL
LFO 3	62	ON	OFF	NOI	56	0	20	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	63	2	0	0	0	0	19	63	20	9
ENV 2	63	-63	45	0	0	3	2	14	20	9
ENV 3	0	0	0	0	0	0	0	0	0	0
ENV 4	63	26	0	32	33	23	29	19	20	9

	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 BANJO** BY: ERIK SHERER

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	FORMT3	OFF	0	OFF	0
OSC 2	-1	0	2	FORMT4	OFF	0	OFF	0
OSC 3	-1	0	0	FORMT5	LFO1	1	OFF	0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	32	ON	ENV4	63	OFF	0
DCA 2	28	ON	ENV4	37	OFF	0
DCA 3	5	ON	ENV4	53	OFF	0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	63	9	17	OFF	0	OFF	0

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	OFF	0

	FREQ	RESET	HUMAN	WAY	L1	DELAY	L2	MOD
LFO 1	10	OFF	ON	TRI	1	2	32	OFF
LFO 2	0	OFF	OFF	TRI	3	12	16	OFF
LFO 3	0	OFF	OFF	NOI	6	15	16	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	0	0	0	0	0	0	0	0	0	0
ENV 2	0	0	0	0	0	0	0	0	0	0
ENV 3	0	0	0	0	0	0	0	0	0	0
ENV 4	63	22	9	0	0	1	33	15	35	16

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

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

**ESQ-1 PROG MATRIX6** BY: DOUG FIETSCH

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

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

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	19	0	3	ENV3	63	ENV1	-31

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	53	8	LFO3	0

	FREQ	RESET	HUMAN	WAY	L1	DELAY	L2	MOD
LFO 1	22	OFF	OFF	TRI	0	1	18	WHEEL
LFO 2	1	OFF	OFF	TRI	0	0	0	OFF
LFO 3	15	OFF	OFF	TRI	56	0	20	WHEEL

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	63	63	63	0	0	34	63	63	20	9
ENV 2	63	53	54	0	0	0	53	63	35	9
ENV 3	63	56	59	10	1	8	33	35	25	0
ENV 4	63	63	63	0	0	0	24	63	25	0

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

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

# CLASSIFIEDS

## USER GROUPS

Philadelphia area ESQ-1 user's group. Lots of public domain patches, programming info, sequencing and MIDI tips, and more. Contact Tom McCaffrey, ESQUPA, P.O. Box 427, Bensalem, PA 19020. (215) 750-0352.

I'd like to find individuals to trade ESQ-1 Sequence/Sound Data with; also Disk Data that utilizes both the ESQ-1/Mirage thru MIDI. Any user groups in my area? Kevin Muse, P.O. Box 512, Vinita, OK 74301. (918) 256-7060 evenings.

## SAMPLES

Wanted to buy: Good "rock" guitar samples for Mirage. Van Halen to Holdsworth - whatever! Quality counts. Call or write: Marq Andrew Speck, 313-485-7631. 2714 Washtenaw, #114, Ypsilanti, MI 48197.

PERCUSSION SOUNDS WANTED (Mirage & ESQ-1): Tympani, Concert Bass Drum, Vibes, Wood Marimba, Concert Crash Cymbals. Sounds must be magically authentic. I'll pay & trade for excellent sounds. I'll even worship you if need be! I'll send cassette to you with return postage. Call: John Melcher, 305-658-7892, 7 am-11:30 pm EST. Write: 8116 Blue Marlin Way, Orlando, FL 32822.

TRADE YOUR MIRAGE SAMPLES. Send me a list, or just send some good disks and I'll copy my best on them and send them back. I also would like to trade Apple II+ software, especially MIDI and Mirage programs (no copyright material). Send to: Daniel Wolkoff, 3705 Gates Rd., Vestal, NY 13850.

RARE ACOUSTIC INSTRUMENTS sampled for the Ensoniq Mirage: Lute, Medieval Harp, Viols, Hand Bells, Clavichord, Vielle, Harpsichord, Recorders, Krumphorns, Dulcimers, Renaissance Pipe Organ, Rebec, Harmonium, Pipes, Dulce Melos, Many more. Barry Carson, MINOTAUR STUDIOS, 4 College Street, Canton, NY 13617.

SAMPLES - Traditional and exotic instruments, 32 partial custom additive and FM, complete custom service including fixing your loops, etc. with SOUND DESIGNER (T.M.). WOODSTOCK DIGITAL DESIGNS, PO BOX 1112, WOODSTOCK, NY 12498.

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## EQUIPMENT

For Sale: SQX-10 Expander cartridge. \$20.00 or best offer. Greg Varlotta 714-680-3545.

New DSK Keyboard. MASOS, Advanced Samplers Guide, Sound Library. \$1000.00. (415) 351-1301. Leave message. San Francisco area.

MIRAGE WANTED - Keyboard or Rack-mount. Swap Yamaha DX-27 synth w/1520 patches on data-cassettes, plus Yamaha PSR-70, (61 keys with rhythms, speakers). Both mint, with pedals, all documentation. Bert Evans, Box 6666, Jacksonville, FL 32236, phone: (904) 398-6888 pm or weekends.

FOR SALE. Model DSK8 Mirage with sequencer expander - mint condition. Asking \$1,100. C. Wahlgren, Belleview, FL, (904) 245-4658. (Or trade for Rack Mount.)

Vision Visual Waveform Editor for Mirage. Runs on IBM or compatible. \$200 or B/O. Input Sampling Filter with Advanced Sampler's Guide. \$75 or B/O.

Also selling Yamaha TX81Z rackmount synth (4 months old under warranty) and Roland TR707 drum machine. \$375 each or B/O. Receipts, all documentation, and factory packing are included. Call Brian at 415-489-2884.

For sale - Rack Mount Mirage. Like new. Used very little. \$795 plus shipping. For details, contact: Bud Snodgrass, 1742 Monte Vista Ct., Alamogordo, NM 88310. (505) 437-6547.

## SOFTWARE

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The only professional 12-Bank ESQ-1/ESQ-M Patch Librarian for the Commodore 64/128! Super Fast Action - 100% Machine Language Program! Features: 12 Banks (480 voices) in computer memory at the same time for easy rearranging/ swapping of voices, renaming sounds, printer support and more! Stores over 1500 voices per diskette. Program supports Passport, Sequential, Dr. T, Syntech, Sonus, and compatible interfaces. Continental USA send \$35.00. Hawaii/Alaska & Canada send \$40.00. Canadian customers payment by Canadian Postal Money Order only in USA Dollars. All prices include prompt shipping! Music Direct, Inc., PO Box 266-B, Hazel Park, MI 48030.

## PATCHES

"Sound Menu" wants your programs! Royalties for your freelance, original, ESQ-1 patches. 1 or 100. Interested? Write: Sound Menu, 48 Shattuck Square, Suite 17, Berkeley, CA 94704.

40 ORIGINAL PATCHES FOR THE ESQ-1. We don't claim that these will be the only patches you will ever need, but these carefully crafted programs sound better! Data cassette and notes only \$20.00 postpaid (CA residents please add 6.5% sales tax). Mescal Music, P.O. Box 5372, Hercules, CA 94547.

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Simmons sound better than any I've ever heard...the brass and reed patches are also exceptional. They are very realistic and quickly became my favorites." - Chris Barth, Transonik Hacker, September issue. Songwriter Series 1 is available on: RAM programmable CARTRIDGE (Bank A--blank for program storage, Bank B--loaded with Songwriter Series 1 sound set) for \$55.95 + \$2.00 shipping and handling, or DATA CASSETTE for just \$19.95 + \$2.00 shipping & handling. To order, CALL: (408) 353-5040, or WRITE to: The MusicBank, 18522 Mt. View Avenue, Los Gatos, CA 95030. Include check or money order (Calif. residents add 6.5% sales tax). Visa and MasterCard accepted. Good luck with your ESQ-1.

Thank you ESQ-1 players for making our Mix and Match Voice Library a hit! No gimmicks, no hype. Just 160 of the best sounds you choose from yourself for only \$15.00 for any 40 (with layers). Patch sheets, cassette or C-64/128 SOS Librarian diskette. Call/write for FREE SAMPLE and sound list, \$3.00 for demo tape. Still Voice Audio, 3041 Sumter Ave. So., St. Louis Park, MN 55426, (612) 927-0451.

ESQ-1 (The \$1400 Fairlight?) Orchestra sounds, wheel controlled filter sweeps, sampled sounding EFX, choir voices, Hammond B-3 with and without keyclick, wheel controlled Leslie, and more. 40 studio quality patches w/performance notes. Send \$16.00 for datasheets or \$25.00 for data tape (cassette) to: WEINBECK SOUNDS, 834 E Lake, #216, Wayzata, MN 55391.

ENSONIQ ESQ-1: VOICE CRYSTAL X, the BLANK 80 voice RAM cartridge is here! Made of CRYSTAL CLEAR, high impact resistant polycarbonate, it is FULLY PROGRAMMABLE, all set to load your own voices for only \$50.00. Specify VCX when ordering. VOICE CRYSTAL 1, the 80 voice EEPROM cartridge is DEEP BLUE and filled with 80 voices featuring BANK A; natural instruments: Steinway, tack piano, Rhodes, clav, Taj Mahal flute, trumpet, french horn, bassoon, upright bass, Tomita whistle, fiddle, strings, percussion and...BANK B; electronic instruments: FM organ, FM piano, digital pianos, bell pianos, Moog patches, chorus bass, slap bass, adjustable gated drums/claps. Specify VC1. VOICE CRYSTAL 2 is MAGNIFICENT RED featuring BANK A; organs, harmonica, woodwinds, horn section, classical guitar, music box, spirit voices, sitar, bagpipes, steel drum, belltree, cowbell, congas, and...BANK B; studio grand, fusion, fat OBX, electric guitars w/chorus, polymoog, mellow, voice sync, glass bells, bass moog, techno drumset and...only \$63.00 per cartridge. These are also FULLY PROGRAMMABLE. Specify VC1 or VC2. DATA CASSETTES are also available for \$16.00 per bank of 40 voices. Specify VC1A, VC1B, VC2A, or VC2B. The next series, VC3 and VC4, will be available soon, each with their own unique color and voices. Mail check or money order to: EYE AND I PRODUCTIONS, INC., 2151 Old Oakland Rd. #224, San Jose, CA, 95131. For COD orders and more info call (408) 943-0139. We pay all tax and shipping for COD orders over \$45.00. We've often found ways to improve our voices and have wanted to share them with our customers so now we're featuring VOICE CRYSTAL UPGRADES to be published in this classified section of the Hacker every month. Watch for them!

Ensoniq ESQ-1 Owners, buy the best. Volume 1: 40 exceptional sound programs. Only \$19.95 for data cassette and program sheets; also tips for effects processing, splits/layers. Quick Delivery! Dark Horse Music, PO Box 295, Crested Butte, CO 81224.

## PATCH UPDATES

VOICE CRYSTAL UPGRADE #3-B4-12  
MODEL: VC1  
PATCH: SLPBAS  
LOCATION: BANK B4  
FILTER: FREQ=60, Q=03  
ENV 3: L3=10, T2=36  
ENV 4: TK=32

NOTE: Reduces sustain in higher ranges, lengthens sustain in lower ranges and reduces wow effect for a more natural sound. Apply more velocity for normal bass and tap lightly for snap/slap effect.

## SEQUENCES

For the ESQ-1 with expanded memory: Classical music sequences from piano and organ scores. Patches to go with the sequences using SOS software and Commodore 64. Send for a free list. Four volumes now available at \$14.95 each. Also supplied on data cassette. Don Pribble, 6810 Highway 55, Minneapolis, MN 55427.

For expanded ESQ-1 and Drumulator format drum machine. 6 Frank Sinatra standards - That's Life, Summer Wind, Tramp, Kick, Strangers, and Come Fly. 2 Dumps of data on cassette: US \$40.00. Also other 50's and 60's lounge tunes, all hits. P. Sturges, 6544 Imperial St., Burnaby, BC, Canada U5E-1M8.

## SERVICES

If you need many different sounds instantaneously, and can't afford \$269 to \$400 for a memory expansion, and you don't have the time or patience for customizing your disks, then give me a call and for as low as \$2 per wavetable I'll do the job! Call or write: Jack C. Loesch, 201-264-3512 after 6 pm Eastern time. 162 Maple Pl., Keyport, NJ 07735.

## ACCESSORIES

THE MIRAGE MEMORY EXPANDER (MME) transforms your Mirage into a Turbo-Mirage. Imagine having 10 fully independent sound banks available at the touch of a button for live performance. Consider the power of instant A-B comparisons when sampling or programming sounds. The MME installs easily in 1 hour and comes complete with installation instructions. All this for only \$269. So call or write today to: Virtual Engineering Corp., 2004 Fernwood Road, Victoria, BC, Canada V8T 2Y9. (604) 537-2476.

## INSTRUCTION

MIRAGE VIDEO INSTRUCTIONAL TAPES. MIRAGE TECHNIQUES VOL 1. Basic operational functions, parameter functions, basic sampling, multi-sampling, basic MASOS functions, moving wavetables, making performance disks, tips and tricks.... BONUS!!! Also hear demonstrations of M.U.G. sounds. (Approx. 70 min.) MIRAGE PRODUCTS REVIEW VIDEO VOL. 2. A hands-on experience visually translated. The following companies' products will be reviewed: Ensoniq VES for Apple II+/E and Commodore 64/128. Turtle Beach Software's Vision for IBM PC/XT, AT or compatible. Blank Software's Soundlab for Apple Macintosh. Neo-Sync Labs' Mirage-Aid for Commodore 64/128 and Apple. Black Squirrel Software's MIDI Additive Software Synthesis for Apple II. Upward Concepts' Multi-Temperament Disk and User-Defined Micro-Tonal Scales. Ensoniq Sound Libraries Vol. A and B. Disks 100, 101, 102, FMT-2, C-1, C-2. K-Muse Sound Libraries Select Strings and Killer Comps. NON-MEMBERS: \$29.95 each video. M.U.G. members: \$19.95 each video. Include \$3 shipping and handling. NY State residents add 8.25% tax. Specify Beta or VHS. Checks or MO payable: G-4 Productions, 622 Odell Ave., Yonkers, NY 10710.

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We now do "custom" Mirage disks at an extra \$5 charge per disk. Custom disks include Mirage 3.2 operating system. Order the Library index (\$2) to figure what you need, or order our demo cassette for \$5.

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## Livewire Audio

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## MULTIPLE OUTPUTS FOR THE MIRAGE

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# THE INTERFACE

Letters for The Interface may be sent to any of the following addresses:  
U.S. Mail - The Interface, Transoniq Hacker, 5047 SW 26th Dr., Portland, OR 97201  
Electronic mail - GENIE Network: TRANSONIQ, CompuServe: 73260,3353, or PAN: TRANSONIQ.

Hi:

I am a proud owner of a Mirage. However, when it comes to looping I'm lost!!

I am using a Commodore 64 and the Sonus visual editor and my problem is getting a long loop to work well. What kind of visuals should I be looking for on the Sonus? Where should the loop be made? Is the only way to get a good loop through crossfade and through limiter/compressors and reverb units? My noise levels are high and my loops clip. Also, what are the purposes of parameters 15 and 16?

Steve Schmidt  
CompuServe, [72220,1431]

*[TH - Sounds like the same problems everyone goes through. It mostly just takes some time, practice, and patience. Are your loops clipping or "clicking"? "Clicking" just means that they need more work. If they're clipping and you still have high noise levels maybe you're running into a dynamic range problem - time for some signal compression. Crossfading is certainly one of the better techniques for smoothing out loops. We've got a fairly comprehensive article on this technique that should either be in this issue or next.]*

*[Ensoniq's response - Mirage Parameter 15 (Copy Program to Lower) and 16 (Copy Program to Upper) allow the user to copy all parameters of a selected program to any other program in memory. Using Parameter 15, for example, you could copy upper program 1 to lower program 3.*

*While these commands do copy all the program parameters (parameters 27 through 59), they have no effect on wave data.]*

Dear TH,

I just received a sample issue of Transoniq Hacker. It's great - well-balanced in its coverage. I definitely like the programming tips and the reviews of available patches, and of course, Hackerpatch. The extended letters section is a good forum for information exchange.

I must take exception to Chris Barth's response in the letters section of Issue 27 where he says that spelling out the harmonics of the waveshapes is not useful. When I want to tweak a patch or build a new one, I like to know what I'm

using as a building block. To help build realistic patches, I've found a couple of books to be helpful: Wehrman's "ESQ-1 Advanced Programming Guide", published by Alexander Publishing and Howard Massey's "A Synthesist's Guide To Acoustic Instruments." The latter is available through Mix Publications (via Electronic Musician Magazine) and I recommend it highly for anyone interested in seeing what makes instruments sound the way they do. It also shows patches of each sound for popular synthesizers (analog, Casio, DX-7, and sampling).

Anyway, keep up the good work, and happy hacking.

P.S. I wish I'd heard about your newsletter sooner!

Sincerely,  
Bob Bockstahler  
Encinitas, CA

*[TH - Thanks for the info. We're particularly glad to get a second opinion on Wehrman's book. Our reviewer didn't really care for it, but so much of that depends on where you are and where you're trying to go. The TH editor (and part-time keyboard teacher) finds his book to be extremely useful in a teaching context.]*

Dear TH,

I attempted to get a brochure on MIDI-DRIVE from IVM in Pennsylvania. IVM informed me that MIDI-DRIVE would not be available yet, and has a long waiting list of back-orders. It was advertised as being already available in some past issues of TRANSONIQ HACKER. Can you help?

Sincerely,  
Gerald Jaeger  
Washington, MO

*[TH - We asked IVM about this and they responded saying that production ran into some unexpected delays that have since been resolved. The MIDI-DRIVE should be available both from dealers and directly from IVM near the end of October.]*

Dear TH,

Does anyone know anything about a company called Digital Software, 1923 N. Wickham Road., #101, Melbourne, FL? I

sent them \$15 three months ago for a demo disk of Mirage sounds they were advertising... and have yet to hear back from them.

Just curious,  
Rob Bryanton  
Regina, Sask., Canada

*[TH - As mentioned in our RND NOTES section in Issue #25, their phone has been disconnected and we haven't been able to get in touch with them, either. I suspect that they're history (along with your \$15). Unfortunately, this is all too common with small start-up companies (Florida seems to have more than their share of this kind of thing for some reason). If you really want to be extra careful, call the local Chamber of Commerce or Business Bureau before you order.]*

Dear TH,

I have a couple of questions for you.

1). Do I understand right, that the Mirage without the memory expansion cartridge will hold eight small sequences but with the memory expander it will hold only three (albeit larger) sequences? If so, is there any way to re-partition the expansion to hold more than three?

2). Would it be impossible (using current operating systems) to have one disk hold one sound (upper and lower) plus a much larger sequence than the 1033 event now possible?

Keep up the good work! We appreciate all the answers we get to our inane (sometimes!) questions.

Sincerely,  
O. Lloyd Sillito  
Calgary, Alta., Canada

*[Ensoniq's response - The distinction must be made here between internal Mirage memory and disk memory. The internal memory of the Mirage will hold one upper sound, one lower sound and one sequence. With an SQX-1 Sequencer Expander Cartridge installed, that one sequence in the internal memory can be larger (1024 events as opposed to 333).*

*Each Mirage disk can store three Upper sounds and three Lower sounds (each composed of 64k of sound data). In addition to the memory allocated for sounds, there is a fixed amount of*

memory dedicated to storage of sequence data. This memory block allows you to store 8 small sequences (1k each) or 3 large sequences (3k each). This partitioning of the disk memory is fixed and cannot be altered by the user.]

Dear Hacker,

Perhaps there are a few, out of your 9000 readers, who don't exactly fall into any of the categories: "performing musicians", "technical wizards" or "synthesizer elite" and who shudder just a hair at being classified as "regular people." I refer to an exchange of comments between Chris Barth and Bob Wehrman in Hacker #27.

So, as an "ESQ novice," I read Chris Barth's review of Valhala sounds with a profound sense of wonder bordering on confusion. I have the Valhala sounds but, alas, I can only compare them with the factory sounds I found on the (several) cartridges that I bought with the ESQ. My problem is that I don't know what a Casio sound sounds like - and no image comes to my mind when people start talking about what a Moog sound should sound like (so much for the universality of describing a sound - or, for that matter, the taste of a fresh-picked strawberry!). Compared to the factory sounds, I think the Valhala sounds are great - but I already claimed immunity under the novice act of '82.

My question has to do with how one "tests" a sound in the first place. Will my cartridge sound the same when it's plugged into Chris's machine - for that matter, will my ESQ sound the same (to either me or Chris) when played through HIS sound system? I can absolutely guarantee that HIS ESQ won't sound the same when played over MY sound system (ugh).

I have only made a few patches. I have to do this using earphones because the guy upstairs isn't a synth freak. Once in a while, though, I am home when he is not and then I play these patches over my (ugh) sound system. They are not the same patches - very often what sounds groovy (is that still a good word?) in the earphones will have that wonderful '30's quality when played over the speakers - sort of makes your skin crawl.

Perhaps the lack of something like a "standard sound system" is another factor in the Aiken/Barth syndrome?

Were it not for the Hacker, I would be a novice instead of a novice. Out of the four musical publications I receive, yours is the only one I read cover to cover, word for word - and, hell, I don't even know what a Mirage is (yet).

# FEED YOUR MIRAGE SOME LEAPING LIZARDS.

## THE IGUANA

**\$39.95**

Turn your Mirage into a generic MIDI system exclusive librarian. The Mirage with its 128k RAM, disk drive, keypad, and LED display makes an ideal patch and sequence storage device. THE IGUANA allows you to store all your MIDI sysex data on ordinary Mirage formatted disks. Any type or combination of sysex data can be recorded. Store up to three 128k files on a disk. Each file can contain up to 256 separate banks of sysex data. Any bank can be deleted at any time. Create and send up to 64 different sysex request messages. Request messages stored to disk are automatically re-loaded when re-booted. Features include MIDI delay, and the ability to audition & play your patches from the Mirage keyboard, or another keyboard. You will find THE IGUANA out performs all the dedicated MIDI disk drives, which cost hundreds of dollars more!

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## O.S. 3.d

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Turn your Mirage into the ultimate controller keyboard! O.S. 3.d is an update to Ensoniq's O.S. 3.2 which adds new performance enhancements to the Mirage while retaining all of O.S. 3.2's features (except sampling): Receive and transmit over separate, selectable MIDI channels. Re-define the modulation wheel to transmit other MIDI controller data, in real time, such as breath control, volume, portamento time, data entry, etc. Re-define the footswitch to transmit other MIDI switch information other than sustain. Transpose the keyboard by semi-tones to give the Mirage keyboard an effective range of 128 notes. Transposing affects the Mirage's internal voices as well as the voices of any connected instruments. A MIDI "panic button" sends an all notes off message to the Mirage and to any connected instruments. Parameter changes (using the ON/OFF keys) are more than three times faster than O.S. 3.2. You'll never want to go back to O.S. 3.2, ever.

## DIAGNOS

**\$24.95**

A diagnostic operating system for your Mirage which allows you to check all the mechanical connections on your Mirage using the Mirage's LED display. If you have suspected that your Mirage isn't working correctly, here's your chance to find out for sure. Common faults are: a sticky keypad, a pitch wheel that doesn't center, a modulation wheel that doesn't span its entire range, keys that don't sound, or a key that sounds louder or softer than the other keys. DIAGNOS finds these faults and more. DIAGNOS is easy to use and finds mechanical faults quickly. This is an updated version of the program published in this issue of TH.

## MIRAGE MONITOR V1.0

**\$39.95**

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*[Chris Barth responds - If you visit your local music store and listen to different synths, you'll quickly learn to distinguish them by sound. I don't think anyone can describe the taste of strawberry, and no one claims to do so; instead, I assume you've tasted it already and thus will understand the analogy when I say that this new food tastes like strawberry. I "test" sounds much the same way Hugh Hefner selects the Playmate of the Month - it's just not quite as much fun.]*

Dear Hacker,

I would like first to congratulate Ensoniq for putting on the market a fabulous machine called ESQ-1. It is really a master among its kind, as many, many owners already said.

I am a graduate of Berklee College of Music ('84) and I work as an arranger/composer here in Recife (Northeast) Brazil. In working with it I ran into some problems that I would like to clear up.

1). Is there a way to interrupt the tape Load/Save procedure? It is a pain when you want to adjust recording levels and you have to go through the whole sequence, especially the long ones.

2). The glide function on the pitch bend wheel is always a little sharper and flatter than it should be. How can I correct it?

3). Sometimes when I record music to a picture, I have musicians playing along with the sequencer. When that happens I use a separate track just for a click track beat. Since I can't separate the beat and the sounds from the audio outputs, I always have to record a sync track, record the click on another track and then the music. It would be a great time saving device if the ESQ had a separate output just for the click track. That would make it possible to record click, sequencer and musicians in one take, and would put an end to the tape reading problems that always happen. They are not hard to correct, but the time for the studio doesn't stop for that.

Now, for the big question. Due to the distance that I live from the U.S. and from the lack of technical assistance here in my country, I wrote to Ensoniq requesting a service manual for my ESQ. They said that it's a company policy not to give them. That's fine, despite the fact that the companies that produced that other synths I had (Roland and Sequential) promptly sent their respective manuals and ALSO, at my request, the upgrades and retrofits that came up during that time. I can't stress

enough the importance of keeping our instruments updated. Software version 2.3 has come out and it's very important to me, as to every ESQ owner, to have my ESQ upgraded, and the only way I have to do that is if Ensoniq sends the upgrade kit because the address Mr. Steve Mash of Ensoniq gave to me of a technician in Rio did not answer any of my letters. My question is: will Ensoniq be kind enough to send me those upgrades or will it say "No" once again and leave me wondering if it would not have been better if I had bought another synth? The ESQ-1 is fabulous as said before, but a great synth needs great support and assistance, especially in those distant places where assistance equals nothing, where we need to have a real idea of how strongly a company supports a buyer of their product.

For fellow ESQ owners. If any of you would like to trade patches with me, please write to: Mario Lobo Rua Domingos Savio 227/201 - Piedade - Jaboyao Brasil 54000.

I would like to thank the Hacker for giving me the opportunity to voice my opinions and for this truly great magazine. Please don't change the scheme of this magazine. 1/2 ESQ and 1/2 MIRAGE is a fair split.

Thanks,  
Mario Lobo  
Brasil

*[Ensoniq's response - Question 1: There is no way to interrupt the ESQ-1 tape Load/Save command. We suggest that you first try saving a single short sequence when setting tape levels. Activating the ONE SEQ command instead ALL SEQ on the STORAGE page will definitely save you some time.*

*Question 2: It is possible that a mechanical problem with your pitch bend wheel could be preventing you from achieving the full bend range. We suggest that you consult with the nearest Authorized Ensoniq Repair Station or call our Customer Service Department at (215) 647-3930.*

*Question 3: We're told that an upcoming article in this or next month's Hacker will detail an ESQ-1 hardware modification which allows for a separate click-track output. It should be noted that this procedure is not a trivial one and will require you to make circuit board level modifications, thereby voiding the Ensoniq warranty. Such modifications should only be attempted by the technically experienced.*

*"The Big Question": Our service policy is based on a module exchange program; our repair stations do not handle board-level repairs. As a result, our service manuals cover only the*

diagnosis and replacement of entire modules (main board, disk drive, wheel assembly etc.) and are available only to Authorized Ensoniq Repair Stations. This policy benefits our customers as it is ultimately designed to maintain a consistent quality of repair service as it speeds up the repair process.

We are concerned that you have not been able to successfully contact a service center in Brazil. Steve Coscia, our Customer Service Manager, has been given your name and he will be contacting both you and the Rio Service Center.]

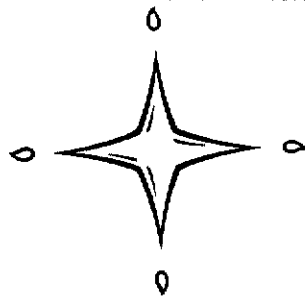
[TH - Since the service manuals don't contain a whole lot of technical info, it's probably not too big a loss that you can't get them. We know of readers who have reverse engineered the Mirage to the point of having complete schematics. Unfortunately, we haven't heard of this happening yet with the ESQ-1 - although we have reason to believe that it's starting. If someone doesn't contact you, you might check back with us in a few months. Good luck.

We're glad you like our coverage mix - but with the new instruments coming out it's not going to be able to stay half-and-half. The new content should be taken care of by the increased page count.]

Dear Hacker,

Hey, why is Chris Barth such a Casio-basher? You would think his review of Valhala's ESQ ROM cartridge was an anti-Japan tirade rather than a real review of the product. Just because he likes the ESQ-1 doesn't mean that all Casio CZ synth patches stink! By now virtually everybody knows that it ain't the synth, it's the programmer! Just as the Yamaha DX has the undeserved reputation of being "thin" sounding, usually from people who can't get beyond the factory sounds, so does Casio get accused of wimpy sounds. Granted, their background in cheezey home keyboards is not helping their reputation, but I have an extensive library of CZ sounds that will hold up well against the ESQ or any other low-cost synth around. And the CZ costs a LOT less!

If Mr. Barth still thinks Casio equals "plastic-sounding", he should listen to the CZ-1 with some real patches in them. I won't even bring up the Casio FZ-1 sampler in this publication, because some Mirage owners might commit suicide when they hear it. My point is, if the Valhala patches really weren't so hot, blame it on Valhala! Not on the Casio CZ (?!).



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Oh, by the way - lots of Mirage and ESQ owners have been asking for a way to "split" the keyboard. There is an easy way to do it, and it's called the Yamaha MEP4. For about \$325, it will split your keyboard up to four ways, switch all the others synths in your set-up to the right program and MIDI volume, stack sounds, filter out stuff, transpose notes, MIDI channels, or any other MIDI data, do MIDI delay, and lots more. Check it out! I love mine, especially for live use.

Thanks for listening, and keep the good work, guys!

Sincerely yours,  
 Mick Seeley  
 President, Livewire Audio  
 Oceanport, NJ

*[Chris Barth's response: Am I anti-Japan if I also don't like sushi? I didn't start the rumor that Casio sounds are wimpy and Yamaha's are thin; like Mick in his letter, I simply acknowledged it and tried to explain why I agreed with it. I've heard great CZ-1 patches; but in terms of overall versatility, I hear a much greater variety of sounds coming out of the ESQ, including most of the great CZ-1 patches.]*

*Even a talented programmer like Mick is limited by the physical constraints of the synth, just like the best race car driver is limited by the structural capabilities of his vehicle. And why do professional photographers use all that expensive equipment when just an Instamatic would do? When Mick suggests that Mirage owners will automatically prefer the new Casio FZ-1 sampler, he must be basing his conclusion on the architecture of the Casio sampler, since the Mirage has a much larger library and is better supported. Well, if it "ain't the synth, it's the programmer", why isn't this true with samplers (in which case, Mirage owners, put down the Valium and beer cocktail). The FZ-1 is also twice as expensive as the Mirage, so I'm not sure the comparison is a fair one.]*

Dear Transoniq Hacker,

Intrigued by Jim Johnson's article, "ESQ - LFO Synchronization and Magic Tempi" in the August, 1987 issue, I decided to do my own calculations.

First, I needed a test patch. I modified the factory patch BASIC with the following values: 1)OSC1: LFO1+63; 2)ENV4: LV=0, T2=0, T3=0, T4=0; and 3) LFO1: RESET=ON, HUMAN=OFF, WAV=SQR, L1=63, DELAY=0, L2=63, MOD=OFF. When this patch sounds, there is a noticeable change in pitch. Each time the pitch changes, the waveform has completed a half cycle.

Second, I needed a timer to calculate



the frequencies, so I created a 4/4 sequence of three bars. One track played a whole note and another track played a dotted whole note, each starting on beat 2 of bar 1. I purposely avoided a note sounding to the end of the sequence because of the "all notes off" message sent at the end of the sequence.

To calculate the frequencies of the different  $FREQ=?$  values (set in the LFO1 page), all I needed to do was find a tempo where the pitch duration of each sounded pitch was the same (complete half cycles). The following formula would then give the frequency:

$$Hz = \frac{(TMP \text{ value}) * (\text{number of sounded pitches})}{120 * (\text{number of quarter notes in duration})}$$

The problem is knowing when a half cycle has completed. If you hear the pitch change, then it's gone past the half cycle. So, I knew I could approximate by finding a TMP value where the TMP-1 value produced one more sounded pitch than the TMP value. Take the number of sounded pitches given by the TMP value for the frequency formula above, and apply it for both the TMP-1 value and the TMP value. The actual frequency is greater than the TMP-1 frequency value, and less than or equal to the TMP value.

Setting LFO1's  $FREQ=7$ , I tested different tempi for the whole note track. I determined that at  $TMP=153$  there was one sounded pitch, and at  $TMP=152$  there were two sounded pitches. This gives the result:  $0.316666 < \text{frequency} \leq 0.31875$ , which contradicts Jim's value of 0.314815.

For better accuracy, I tested different tempi for the dotted whole note track. I determined that at  $TMP=226$  there was one sounded pitch and at  $TMP=225$  there were two sounded pitches. This gives the result:  $0.3125 < \text{frequency} \leq 0.313888$ , which contradicts my previous calculations!

Upon further listening, another upsetting event occurred. I set  $LOOP=ON$  for the sequence, and listened to the dotted whole note track continuously at  $TMP=226$ . There was only one sounded pitch 7 out of 10 times, and the other three times there were two sounded pitches!

All of this leads to the following questions: 1) How did Jim Johnson calculate the frequencies? 2) why do my calculations contradict each other and Jim's values? and 3) why the hell doesn't the ESQ1 play my sequence EXACTLY the same way EVERY time? Finally, Ensoniq must know the actual frequencies which should have been listed in the user's manual. So how about it, Ensoniq - what are the frequencies?

Thanks for a wonderful newsletter for a wonderful synthesizer. I look forward to each issue.

Sincerely,  
Joe Slater  
Dallas, TX

*[Jim Johnson's reply - I also used the ESQ's BASIC patch as the vehicle for testing the LFO frequencies, but rather than using an LFO square wave to modulate pitch, I used two sawtooths modulating the amplitude of two oscillators, as shown below:*

```
OSC1: MOD1 depth = 0
DCA1: LEVEL = 0, MOD1 = MOD2 = LFO1, MOD1
depth = MOD2 depth = -63
OSC2: WAVE = SAW, OCT = -1, MOD1 depth = 0
DCA2: OUTPUT = ON, MOD1 = MOD2 = LFO2,
MOD1 depth = MOD2 depth = -63
LFO1 & LFO2: RESET = ON, HUMAN = OFF, WAV
= SAW, L1 = 63, DELAY = 0
```

*With this arrangement, I was able to find the frequency ratios of any two FREQ settings by setting LFO1 to a high frequency and LFO2 to a lower setting, and counting the number of pulses in LFO1 for each LFO2 cycle. After this, I measured a few critical frequencies by searching for the tempo that fit the best with each frequency, then calculated the table from these results. Our measurements are only off from one another by a few percent, and neither measurement was made with the benefit of any sophisticated lab gear, so the differences are not too surprising. The important thing is that the ratios are right.*

*As to your question about repeatability, I could make a guess, even though I don't know enough about the guts of the ESQ-1 to answer with absolute certainty. The computer inside the ESQ-1 is performing a number of timing functions at any given time - sequencer operations, timing loops for 32 envelope generators and 24 LFOs, etc. Since it can't do everything at once, some of these operations are probably given a higher priority, and therefore may have better timing, while others will be lower priority. I would guess that LFO timing and note off timing - which also affects your measurements, remember - are probably not too high on the priority list for the ESQ's microprocessor.]*

*[Ensoniq's response - The actual ESQ-1 LFO frequencies were not included in the ESQ-1 Musician's Manual due to priority and space considerations. As far as we know, the LFO frequencies published in Issue #26 of the Hacker are accurate.]*

Dear TH,

In the June, 1987 issue (number 24) of the Transoniq Hacker, Jim Johnson stated on page 16 that he and Page Hite of Houston were having difficulty with

using a TX81Z with an ESQ1 for some time now. I have not had any of the troubles that Page Hite has had.

I would like to describe in detail my methodology so that perhaps Page and Jim and others who have experienced some difficulty may try it out and see that it works fine. The first thing that I do is to create a performance setup on the TX81Z that I might like to use in conjunction with the internal sequencer of the ESQ1. Let's say, for example, that I have created a four instrument mode with each instrument having two voices. Let's also say that I have assigned a separate MIDI channel to each instrument, 5 through 8. I have the TX81Z memorize this as PFM-20.

I then enter the MIDI utility function on the TX81Z and change the program change mode to "ind." Then I reselect the performance mode and hook up the ESQ1. Choose a sequence on the internal sequencer and set up four individual tracks with MIDI channels 5 through 8. Then by using the mix/mode panel on the ESQ1, you can set up both volume and programs while actively listening to the TX81Z. All programming of volume and voice number can be done from the ESQ1. This can be done while running the test sequence or not playing. It doesn't make any difference.

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After you get everything the way you like it, you can then go to another sequence and, for example, do the same thing using the same performance set-up but this time you use the mix/mode panel on the ESQ1 to choose four different instruments and four different volumes. Let's also say that we create a third sequence also. If we then go back to the original sequence and run it, the four tracks play the four voices and four volumes as programmed on the ESQ1 and when the second sequence is selected the TX81Z instantly responds with the correct instrument and volume change.

When you select the third sequence it also responds exactly as commanded by the ESQ1. This works for any of the first four banks on the TX81Z as long as you get the program change numbers correct. You can mix them up any way you like. I have had absolutely no trouble with either the ESQ1 or the TX81Z following the ideas above. It works fine for any of the 120 voices you can select from the mix panel on the ESQ1. If you have an eight instrument set-up on the TX81Z and have ten sequences, you can select all of your changes for each sequence from the ESQ1.

I am also somewhat puzzled about

Jim's statement that the 128 presets on the TX81Z are set to respond to MIDI controller 4 when it states explicitly on page 79 of the owner's manual that volume control changes are received on 7 if the cont. change switch is on. With the work I have done as above I can readily verify this. It works.

In sum, I think that the TX81Z is a very fine and able expander for the ESQ1 if you know how to work it in conjunction with the ESQ1 sequencer. If any of your readers would like to discuss any more details of what I have written here they can write to me at my home address and I will be glad to help them.

With best regards,  
Peter D. Gulch  
1493 Greenwood Ave.  
Camden, NJ 08103

*[Jim Johnson's reply - When Page called me, Ensoniq had not yet released the Version 2.2 ROMs for the ESQ-1, which added the volume pedal option to the MASTER page. My impression, from talking to Page and Ensoniq's reps, was that they confirmed the problem and were going to consider some ways to get around it, which presumably led to the inclusion of the volume pedal feature in version 2.2. If you have the newer ROMs, these would alleviate the problem.]*

*I'm not personally familiar with the TX81Z, so I can't comment on your other statements regarding controller 4. I took the information from Page, who seemed to know what he was talking about. Page spoke to Ensoniq and Yamaha and received no immediate solution to the problem, and I put the question up on PAN and got no suggestions on how to fix it, so I assumed it was a valid complaint. One thing to consider, though: if the "cont. change switch" that you mention is a global control, that would indeed solve this problem, but if that switch is stored as part of a voice, then it can't be changed as part of a preset (which is what I understood from talking to Page) and would be no help. Either way, apparently Yamaha and/or Ensoniq solved the problem, since it works for you.]*

*[Ensoniq' response - Whenever compatibility between Ensoniq equipment and other manufacturers equipment becomes an issue, it is our policy to pursue and resolve the situation as quickly and efficiently as possible. After learning of this particular situation, we contacted Yamaha engineers and it was determined that the volume change problem was due to a bug in the TX81Z software. The bug was fixed in version 1.3 software for the TX81Z. The successful resolution of this problem is an example of the kind of cooperation between manufacturers that benefits everyone concerned.]*

*The fact that Mr. Gulch's procedure was successful would seem to indicate that he has 1.3 or higher software.]*

Dear Readers,

Just a couple of quick comments along with a quick hello.

First, if any folks in the New York City area are interested in back copies of unavailable Hacker issues, I'd like to help out. You can give me a call at 212-995-0989, and we'll work out the details if you need an issue or two.

Next, I'd like to add to Walter Daniel's comments in the October '87 Hacker Interface. During the writing of my review of the ST Sonic Editor, I spoke with Mr. Daniel about the lack of Top Key editing features on the program. At that time, he agreed that the features could be implemented in a software update. In his letter, he commented that wavesample control parameters, like top key P27, should not be changed externally. I never suggested in the review how the top key editing should be accomplished. To be honest, I'm not qualified to comment about how various features are implemented in software. On the other hand, I think it is valid to

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comment about features that are important to the reader and which are implemented in competing software for the same product.

For what it's worth, I'd like to see a keyboard graphic displaying the top key of the currently selected wavesample. This display might be located underneath the wavesample display screen or some other more easily implemented screen. It would be nice to use the mouse to drag the top key value up or down as needed. This is basically the way the top key display works on Blank Software's Sound Lab for the Mirage.

From Mr. Daniel's comments, it sounds that system exclusive commands are the way to go. I encourage Mr. Daniel, programmer Dean Neufeld and Sonus to continue their good work with additional features. In the end, it will add a lot to the product's success.

Jordan Scott  
New York, NY

Dear Transoniq Hacker,

I recently purchased a MIDI DJ in order to save my patches and sequencer data for my ESQ-1. I have been able to save patches, but storing sequencer data is another problem. I get no error message when saving it to the DJ, but when I load it back into the ESQ-1, I get erroneous data. The display (on the ESQ-1) will be blank in some sections of the sequencer pages and when I try to play what I've loaded, I hear some very "strange" sounds - in no way comparable to what I originally saved. I have tried talking to Ensoniq, but every time I call, someone is about to start working on the problem. I have had the MIDI DJ for about two months now and have had no success with it. Can you help me or make any suggestions?

Sincerely,  
Douglas Nicholson  
Detroit, MI

*[Ensoniq's response - We have recently been pursuing answers to the many MIDI DJ/ESQ-1 sequence dump questions we have received. After attempting the sequence dump procedure with the DJ, we kept receiving the DJ OVERRUN error message (see page 49 of your MIDI DJ owner's manual). We have therefore concluded that either the DJ's memory buffer is too small or the unit cannot handle the speed of data transfer from the ESQ-1.*

*Perhaps a Hacker reader can provide some insight into this situation. If we hear of any relevant tips, we will certainly pass them along.]*

Dear Persons,

I have an ESQ-1, which I think is a great machine. I want to add another synth or

sound generator of some type, however, and had been considering an FB01 or TX81Z. However, after reading the letter and reply in an earlier Interface column regarding the FB01's inability to work with the sequencer part of the ESQ-1, I am at a loss as to other possibilities.

I want something relatively inexpensive that could provide FM sound and add some increased voices to my setup. Has any type of fix been accomplished that would make it possible to use the FB01 with the ESQ-1 sequencer? Are there any other inexpensive (\$500 or less) sound modules out there that would work with the ESQ-1?

I would appreciate any advice that you or your readers could give me.

Sincerely,  
Beverly Hagen  
680 J. E. George Blvd.  
Omaha, NB 68132  
(402) 558-1874

*[TH - You might look over the above discussion on the TX81Z. Erick Hailstone suggests that you might consider, too, the new Roland MT32, which is slightly more expensive (about \$695), but has some really nifty voices plus 31 built-in drum samples.]*



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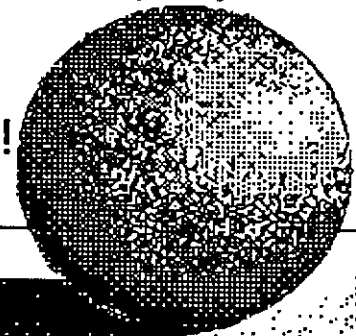
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