

# TransonIQ Hacker

*The Independent Ensoniq User's Newsletter*

## M.U.G. SHOTS

By Erick Hailstone

This episode we have 5 samples from M.U.G. - the international Mirage User's Group back East (see ad this issue or last).

### SAMPLE 1

Lower & Upper: DULCIMER

L1/U1 We start off with some sampling humor. The lowest note is a sentence spoken backwards. I believe it is paraphrased from one of the Beatles records. Now, someone had to tape this and flip the tape backwards for me to know this, so rather than tell you what it is, I think it's only fair that you should work equally as hard.

The Dulcimer sample itself is wonderful. I'm not that familiar with the dulcimer. I believe it is plucked although there are hammered dulcimers. This sounds like a bright harp, one with small metal strings. It is somewhere between an acoustic piano and an acoustic steel string guitar. It is an incredible sound which you can use to create many others. For instance, if you use the pitch wheel correctly you can approximate a Japanese Koto. As far as the loop is concerned it's pretty good. If you start from the highest note you can hear it easily. From the third C down it's very hard to detect. For the rest of the range it seems to be the natural waver a string would have. For a stringed instrument this is a very good loop. I'm very impressed with this sound.

L2/U2 Chorusing is added and in this case it is a very pretty variation.

L3/U3 is approximately the same as L2/U2. The main difference is the way notes decay. With the others you have natural string decay. Here the notes sustain as long as you hold them down.

L4/U4 I hope I'm not missing anything but this seems the same as L3/U3.

### SAMPLE 2

Lower & Upper: MOUTH DRUMS

These are sounds created using nothing but the human mouth. (I am assuming human.) Various techniques are employed. At times the microphone is very close so you can overdrive it for an explosive effect. The lowest sound is 4

notes of a bass drum/door knock. Next: 4 notes of a low pitched percussive cough. Next: 10 notes of mouth tom toms. The pitch drops kind of like electronic toms, cut off at the end abruptly. Next: 1 note of snare side stick. The only way I can imagine getting this sound is hitting your teeth with the microphone. Aargh. Next: 1 note of a water drop. This is the sound you get when you pop your finger out one side of your mouth. Next: a single note of a scratch type sound. Next: 1 note of someone saying "Psst". Next: 1 note of "sisst" only it cuts off very quickly, like rubbing sandpapers together. Next: 1 note of something similar to a short electronic cymbal. Next: 7 notes of an airy voice saying "ahh", post-ice-cold-drink. Next: 3 notes of an "ee" vowel with a slight noise burst in the attack. Next: 13 notes of burps. Just what I need to hear at 3 a.m. To me these sound best when they are less obvious. If you shorten them up a bit they sound less like burps and more like a strange percussion instrument. Next: 1 note of a wet low pitched "meow", more like "eow" only raspy and spitty. Next: 1 octave of "Lah's". These have a light filter sweep and long release so they run into each other. Although you can hear the loop it fits in fine with the sound.

L2/U2 - Chorused.

L3/U3 - Identical to L1/U1.

L4/U4 - Identical to L3/U3.

### SAMPLE 3

Lower & Upper: MOOG STRINGS

L1/U1 Although this is not a perfect sample it is quite good in the bottom 2/3 of the range. It is a perfect example of taking a monophonic instrument like a Mini Moog, developing a great sound, sampling it with the end result being 8 voice polyphonic and touch sensitive. The split is at C4. The upper sound is still the same patch. Starting from the top the loop is pretty obnoxious on the highest C. On the C below it there is still a noticeable ticking. This reminds me of some the first samples that came from Ensoniq. The lowest range is very rich. The attack is very slow and heavily chorused. The sound swells in and then decays, taking quite awhile to fade. The filter is set at 2 and when you open it up it is way too aggressive. As I closed the filter at about 20 it was tolerable.

L2/U2 We lose the chorusing and have a sharp attack and a

quick release. The upper sample is more percussive. It is quite crisp at first then the filter closes quickly. In the highest range the loop is so noticeable it makes it hard to use.

L3/U3 gives us a very long release time. The filter is set to give this a slow waaaa, kind of brass-like. There is a natural chorusing sound that drops off at the loop. The mod wheel adds some more chorusing.

L4/U4 seems to be the same as L3/U3.

#### SAMPLE 4

Lower & Upper: SCRATCH DRUMS

L1/U1 From left to right we start with 9 notes of a drum like substance. It sounds like the noise a monkey would make only rotated and chopped off. Next: 13 notes of a horn blast similar to the sound used to introduce the solo in the song "Owner of The Lonely Heart" by Yes. Next: 11 notes of scratch drum which is the sound of a record being rotated backwards and forwards with the needle down on the record. (Popularized in Rap music.) Next: 7 notes of a high pitched motor - could be a blender or small chain saw. Next: We have 4 notes of a heavily filtered strange sounding human voice, like it's gone through a Vocorder. I'm not sure what the voice is saying but it could be "Nuts in Space". Next: 4 notes of the same voice saying "something" sound effect. Then, 2 notes of bass drum. similar to Ensoniq's Ambient bass drum. Next: 3 notes of ambient snare. Next: 1 note of closed high hat. Next: 3 notes of electronic toms. After the drum is struck the pitch drops. Next: 1 note of a hand clap. This is rather limp sounding. The top 3 notes are a metallic voice saying "Ah Ha".

L2/U2 The main difference from L1/U1 is chorusing.

L3/U3 Identical to L1/U1.

L4/U4 Identical to L2/U2.

#### SAMPLE 5

Lower: MIDI TONE RACK

L1 The top note is 31. The sound is similar to an Orchestra hit. There are several different textures. The main sound is a synth/string sound. There is a metallic percussive attack as if a large metal tube were struck, one that decayed quickly and had few overtones. This sound is not looped. Although the filter is wide open this is a fairly muted sound.

L2 adds a nice wiggly vibrato.

L3 is a thinner sound with a slight filter sweep to it. The attack is such that the lighter your touch the quicker the note decays.

L4 Chorused and the filter is turned down to 23 which dampens things down quite a bit.

Upper: RACK SOLO

U1 This sample is also not looped. There is a decent amount of sustain and the way it decays is such that looping is not required. It is not as big a sound as L1. Where L1 is rather

orchestral this is more chamber sized. It has a similar metallic percussiveness. There are a lot of overtones ringing out, rather oriental sounding. Notes have a medium decay.

U2 is pretty much the same as U1 but the filter is set to 00 to dampen the sound down quite a bit. Some chorusing as well.

U3 The chorusing is much heavier on this variation. The release time is instantaneous.

U4 is a more muted sound. It's as if the filter were open then closed right after the initial attack. It is lightly chorused and decays immediately upon release of the note.

Well, these samples, particularly the dulcimer, are a great effort and the kind of thing we hope other user groups are doing. This kind of third-party user group offering benefits everyone - please let us know what your group is doing.

*Erick Hailstone studied composition and arranging at the University of Nevada and at Berklee College of Music. He has been involved with synthesizers and related technology for the past seven years and is a partner in "The MIDI Connection," a Portland-based consulting firm. Primarily a guitarist, his orientation has been in performing and recording with these devices.*

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Presents:

# Vision

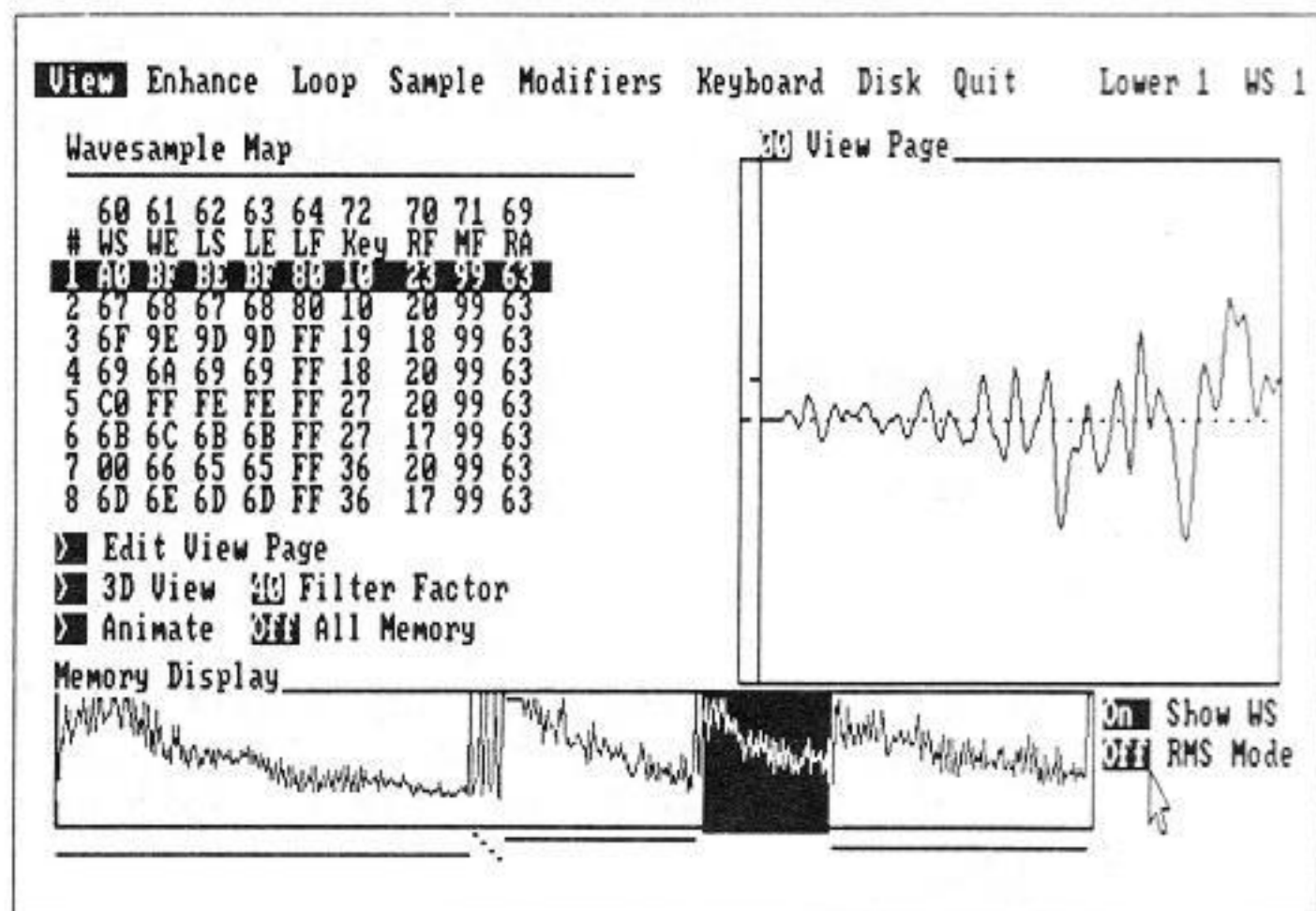
## Visual Editing for the Mirage and IBM PC, XT, AT

by Turtle Beach Softworks

Created by seasoned samplers, Vision is an unbeatable new sound design program for the IBM, PC, XT, AT or compatible, that can make sound manipulation easier for Mirage users. The program is designed specifically for visual editing and allows fast, easy wavesample editing and parameter manipulation without many of the drawbacks of other sound design programs.

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Vision contains a complete manual, program diskette for the PC and 2 MASOS-I diskettes.



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**The View Screen** - The View screen shows the wavesample memory of the entire keyboard with the current wavesample highlighted. View, edit and Vision's exclusive animate function permit waveform manipulation and even allow you to help correct tuning and volume problems and find ideal loop points.

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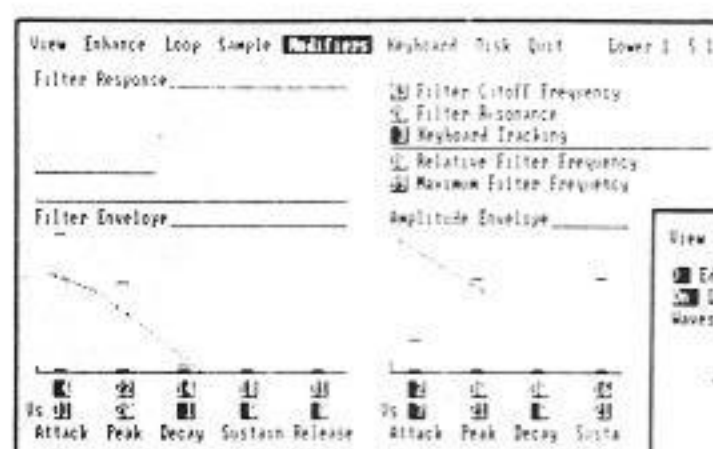
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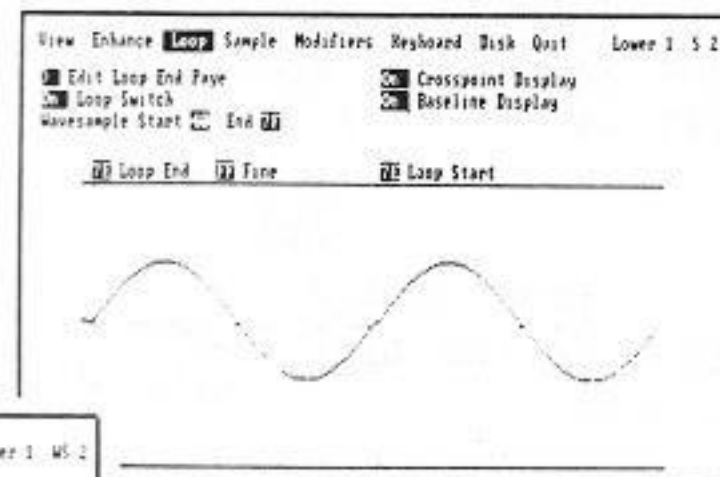
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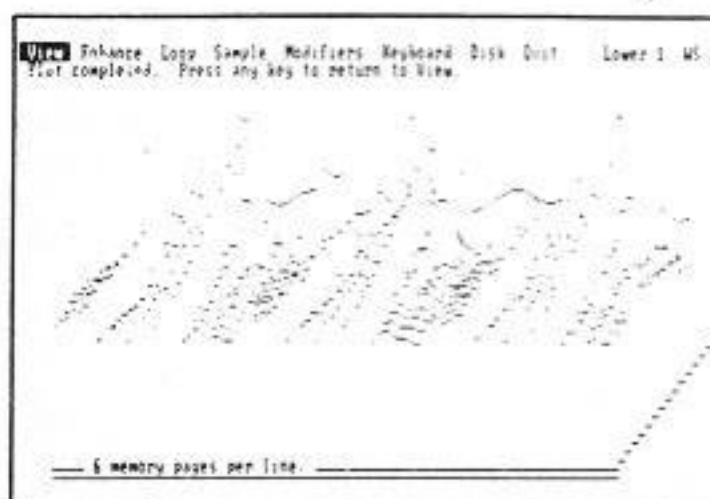
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The Modifiers Screen



The Loop Screen



The 3D Screen



# ESQ-TIPS

## ENVELOPES IN THE ESQ-1

*By Clark Salisbury*

Back for more abuse, eh? Well fine. In our series on ESQ-1 programming we come now to envelopes. As some of you may remember, we've talked about envelopes before in terms of the Mirage. There are a couple of reasons that I want to spend some time talking about the ESQ-1's envelopes. For one thing, they're different from Mirage envelopes. Not completely different, but they are more complex, and they are operated on somewhat differently. The other thing is that they do more. I think it's fairly safe to say that the envelopes in the ESQ-1 are a much more important contributor to the sounds of the ESQ-1 than are those of the Mirage. As a matter of fact, I tend to find the envelope second in importance only to the actual waveform in terms of creating new sounds; and even then it can be a mighty close second.

So what's the big deal with envelopes, anyway? You know, it's funny because the envelopes don't even make a sound of their own. That's right, you never directly hear an envelope. The envelopes entire *raison d'être* is as a source of control information. The output of the envelope is used for one thing only - as a source of modulation for some other component. What makes it tricky is that the component upon which the envelope acts in many cases is itself a type of controlling device (such as a DCA), and may not produce any sound of its own, either. Let me take a moment to clarify this.

Take, as an example, an ordinary water tap - like the one you have in your kitchen (those of you who have kitchens). Let's now pretend that the water that comes out of this tap is actually sound - when you turn the tap on, you get a certain amount (volume) of water (sound). The device that controls the volume of water that passes is the tap itself; we can compare this component to the DCA in a synthesizer. The difference is that the tap lets more or less water pass, while a DCA lets more or less sound pass. Now there's a third part to our analogy which is, what controls the tap? Well obviously it's your hand, working in conjunction with your brain. You decide whether you want to turn on the tap slowly or quickly; whether you want a trickle or a torrent; whether you want an abrupt end to the flow, or a gradual shutting off of the flow. An envelope generator can work in a fairly analogous fashion. It can turn on the tap (DCA) slowly or quickly; it can send the audio signal through at full blast or as a mere trickle; and it can control how quickly or slowly the volume dies out again once it's all over. So the envelope generator connected to a DCA (of course there are many other things an envelope generator can be connected to within an ESQ-1) can be compared to your hand connected to a water tap. And the

programmed parameter settings that determine the rates at which things happen (how quickly things are turned on and off or up and down) and the levels to which they go (how far on, or up, or down) can be compared, roughly, to the controlling information in your brain.

Of course, an envelope generator can control any number of things besides oscillator volume. Oscillator pitch is one. Or through connection to a filter, an oscillator's timbral output could be controlled. There are lots of things an envelope generator can control, but before we can effectively put this tool to use, we need to understand how to make it do exactly what we want it to.

Envelope generators control changes over time; how long it takes for a sound to rise in pitch, or get to full volume and begin to decay again, etc. For each of these aspects of the way in which a sound changes dynamically, we need an associated segment in our envelope generator. In other words, if we want to create a sound that has some sort of attack and decay, then we need an envelope generator with at least two parts; one for the attack portion of the envelope, and another for the decay portion. In fact, the ESQ-1 has five of these segments, and we think of them in terms of time and level. In other words, it takes a certain amount of time to reach a certain level; it takes time(n) to reach level(n). There are four time segments labeled T1, T2, T3, and T4, for time 1, time 2, time 3, and time 4. Each of these time functions controls how long it takes for the envelope to reach a specified level. There are three user definable levels available, and they are labeled L1, L2, and L3. Note that it is given that the beginning and ending levels will always be 0; envelopes will always start at 0 and end at 0. So if we are in the mood to create a sound that builds up slowly to full volume, we would set time 1 to a fairly high number, and level 1 to its maximum value. In this way, the sound would build slowly, at the speed set by time 1, to full volume, which is the level set by level 1. And to quickly clarify one point, the times are called times because that's what they are. It will take the same amount of time to reach any given level, regardless of what the setting for that level is. This is to say that the time parameters found on the ESQ-1 are different than the rate parameters that one would find on synthesizers such as the DX-7. In a DX-7, for example, if one increases the level setting within an envelope generator, it will take a longer period of time for that level to be reached. This is because the DX-7 envelopes move at a pre-programmed rate, rather than taking a specific amount of time. However, this is not the case with the ESQ-1. When you set a value for, say, time 1, that's how long it

will take to reach level 1, regardless of how high or low a value level 1 is set to.

As I've said, the initial level of any ESQ-1 envelope is always 0. Don't confuse this with level 1, though. Level 1 is actually the second level reached, and it takes time 1 to go from 0 to level 1 once a key has been depressed. From there, it takes time 2 to get to level 2. And note here that level 2 can have either a higher or lower value than level 1 (unless level 1 is already set to the maximum value of +63, in which case level 2 can be no higher). From here it takes time 3 to reach level 3. Level three is what is known as the sustain level. This is because the envelope generator's output will remain at this level, once it has been reached, until you release the key. Once the key has been released, the envelope's output will fall back to 0 at the speed set by time 4.

For those of you familiar with more traditional ADSR type envelopes, this should seem pretty normal. But there's a significant difference between ESQ-1 envelopes and their more pedestrian cousins in the analog world. This happens to be the fact that any level of an ESQ-1 envelope can go negative, as well as positive. In other words, any level can have a value that is less than zero. This is cool. You could apply an envelope with a negative level setting to an oscillator, for example, if you wanted to bend that oscillator's pitch flat. You could also create some pretty neat panning effects by applying an envelope with both positive and negative components to the panning section of DCA 4. But we'll be getting to these types of applications a bit later on.

For an envelope generator to do us any good at all, it must first be "patched" (connected) to something else. An envelope generator is strictly a control device, as you'll remember. It makes no sound of its own; it can only act (directly or indirectly) on some other source of audio information. Good candidates to receive an envelope generator's output include the oscillators, the DCA's, and the filter.

To patch in an envelope generator, you activate one of the control inputs for the component you wish to control and use the data slider or increment/decrement buttons to select which envelope generator's output is applied. For example, let's modulate the pitch of oscillator 1 with envelope 1. Choose the factory program called "BASIC" (you should find it in internal bank 2). Hit the button labeled <OSC 1>. Along the bottom of the display you should see the two modulation inputs to oscillator 1, along with a modulation amount for each. Make sure that the second modulation input is turned off by hitting the soft button underneath it and moving the data slider all the way up; it should now read "off".

Hit the soft button under the first modulation input. Move the slider, or use the increment/decrement buttons until you see <ENV 1> appear in the window. You have now patched envelope generator #1 to oscillator #1. Now you must decide

how much effect you want it to have on oscillator 1. Hit the soft button under the modulation amount display. This is the two digit display directly to the right of the modulation source display. Use the slider to set the desired amount (note that the numbers can go either positive or negative). For now, let's set this value to about 25.

Next, let's get the envelope to do something. Hit the button labeled <ENV 1>. Set time 1 for a value of about 32, and level 1 for a value of +63. Set time 2 also to a value of 32, but set level 2 to a value of -63. Set time three to a value of 0, and level three to a value of -30, and set time four to a value of 20. Now play a note. Weird, huh? What's going on here is that oscillator 1's pitch is now being controlled by envelope 1 (as well as the keyboard). When you strike a key, it takes time one to reach the pitch set at level 1. As you continue to hold the key down, the oscillator's pitch falls at the speed determined by time 2 until it reaches level 2, which is negative. This has the effect of taking the oscillator flat relative to the pitch it started out at. Once level 2 has been reached, it jumps immediately (time 0) to the level set at the sustain portion of the envelope, level 3. Since level 3 is also a negative number, the oscillator will still be flat, and since this is the sustain portion of the envelope, it will remain at this pitch until the key is released, at which time it will rise at the speed set by time 4 back to its normal pitch. Experiment a bit with setting different values for the envelope levels first, then try it using different settings for the times.

Setting the envelope's levels is one way to control how much effect an envelope will have. There's another way, though.

Return to the oscillator page (hit the button labeled <OSC1>). Select the first modulation amount parameter by pressing its soft button. Using the data slider, increase the amount to a value of +63; now try a value of -63. As you see, the modulation amount parameter controls how much overall effect an envelope generator (or any other modulator for that matter) has on any given component, and whether this modulation has a positive or negative effect. You can think of the modulation amount control as a master level control. Pay particular attention to what happens when you use negative numbers for the modulation amount; this is a type of modulation that you won't see in most conventional synthesizers.

Now I know you're starting to wonder what to do with all this modulation capability. Well, one idea might be to use one envelope to bend the pitch of one of the oscillators flat, while another bends the pitch of another oscillator sharp, to create a hearty blip at the beginning of a sound's attack for some nice stab-brass effects. Of course you could achieve pretty much the same effect using only one envelope by assigning it a positive modulation amount for one oscillator and a negative modulation amount for another oscillator. To check it out, choose an envelope - let's say envelope 1. Keep level 1 pretty modest - somewhere between 3 and 8

probably - and set the other levels back at 0. Make time 1 and time 2 fairly short. By keeping their values at around 12 or so you can create an effect that moves quickly out of pitch, but also comes back into pitch when the envelope hits the levels you have set to 0. Try applying this envelope to two different oscillators, but give it a positive modulation amount for one, and a negative amount for the other. If you're going for a brass-type sound, I'd suggest using either the sawtooth waveforms or else the brighter pulse waves. If you're starting with the "BASIC" program, the second oscillator will need to be "patched in". This can be done by hitting the button labelled DCA 2, patching in envelope 4 as the modulation source, and giving it a modulation amount of +63. If you don't understand what we're doing here, not to worry. We'll cover this stuff later when time and space permit.

Now I know there are some parts of the ESQ-1 envelope generators that we haven't covered yet, but have no fear. We'll be getting to all this stuff in upcoming months. There's a lot of material to get through here, but it will prove well worth the effort in our quest to make the most of the ESQ-1. Anyway, I hope this encourages you all to start enveloping away. If you've got any questions, or if you have any input about this column, or if I've left something out that you'd like to see covered about the ESQ-1 or the Mirage, please let me know. It's the only way I can tell if I'm doing my job right.

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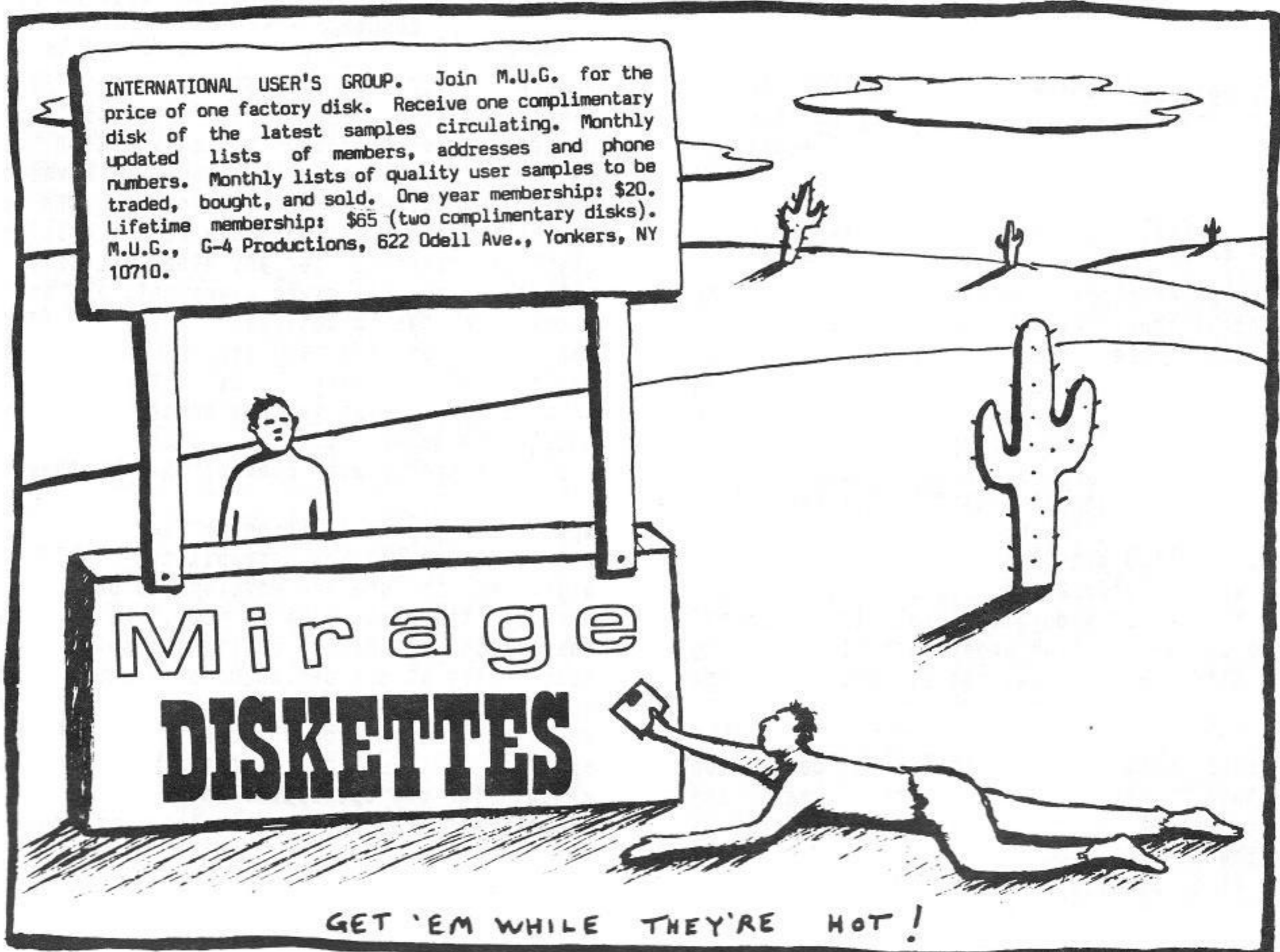
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# CLASSIFIEDS

## USER GROUPS

BIG MAMA RECORDING STUDIO is interested in contacting other Mirage owners in East Tenn. and Western N.C. area to start user group, exchange sounds and info. Norbert Stovall, (615) 577-5597, Knoxville.

I am interested in starting or joining a user group for the Ensoniq ESQ-1. If there is anyone out there interested in trading patches, sequences and tips, contact me. Bob Wham, 1-214-454-6792, 4900 Joe Ramsey Blvd., #1303, Greenville, TX 75401.

THE International User's Group. Don't have to sample. Just enjoy the software. Join M.U.G. for the price of one factory disk. Receive one complimentary disk of samples. Monthly lists of quality user samples. One year membership: \$20. Lifetime: \$65. (2 free disks.) Checks or M.O. payable: G-4 Productions - M.U.G., 622 Odell Ave., Yonkers, NY 10710.

Now forming the Mirage Users Group of Orange County. Interested parties may contact Aaron Hallas (714) 821-6196.

LET'S SWAP SOUNDS. I am interested in forming a users group to meet monthly in the Chicago area. (312) 432-7246.

British Mirage owners should all contact the United Kingdom Mirage User Group. You are bound to hear something to your advantage. Phone Matthew on 089275516 or write to: 2, Walnut Tree Cottages, The Green, Frant, N. Tunbridge Wells, East Sussex TN3 9DE.

Seattle area user's group. Call Loren at (206) 241-7825.

## SAMPLES

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Anyone interested in trading Mirage sounds or information, please call or write Jack Loesch, 162 Maple Place, Keyport, NJ 07735. (210) 264-3512.

I will swap sounds with anybody anywhere in the world. Send me a list, tape, or disks of what you wish to swap. I will send you some excellent quality original sounds immediately. Write to: 2, Walnut Tree Cottages, The Green, Frant, N. Tunbridge Wells, East Sussex, TN3 9DE. Great Britain.

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Wanted - I would like to trade samples with others via the mail. I have all kinds of sound effects and instrument sounds. I am very interested in samples of Oberheim or other "thick" synth type sounds. If anyone has a VES for a Commodore 64, I would be interested in any comments you may have about it. Call Kelly Norris at 205-284-1353 after 5:00 CDT or write to: Kelly Norris, 1127 Birdwood Ct., Montgomery, AL 36111.

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demo cassette w/index - \$5. Specify synth. Also: patches for Juno1/2, Jupiter6, Poly800, Juno106. Write for details. Syntech, Hybrid Arts software priced LOW. Livewire Audio, Dept TH, 79 Shrewsbury Ave., Oceanport, NJ 07757. (201) 870-3115.

### EQUIPMENT

Ensoniq Mirage keyboard, original version with S/N update kit, MASOS and Advanced Sampler's Guide, Triton disk formatter, Pro-Tec carrying case, 12 factory and 4 assorted disks. Used only in home studio. \$1500 or trade for ESQ-1. Ed, (213) 329-4888. Los Angeles area.

Apple Macintosh 400k external disk drive. \$250.00/B.O. Call (914) 235-6576. LWR Westchester Area.

COMPLETE COMMODORE SYSTEM! Includes 1541 disk drive, Sequential Model 64 MIDI Sequencer, Sight & Sound Magical Musical Keyboard, Koala Pad, lots of games + serious programs, joystick, Commodore tape drive, blank 5-1/4" disks with holder, lots of programming books +++ - \$450/B.O. Call (914) 235-6576 anytime. LWR Westchester Area.

Ensoniq Mirage keyboard. Excellent condition. \$1395 or trade for Mirage Rack Mount. Roland MSQ-700 sequencer - \$395. Mirage flight case - trade for DX7 flight case. Call Bryan in Miami (305) 551-7589.

For sale - Ensoniq Mirage. Purchased November. Still under warranty. Perfect condition. 8 disks, MASOS, and Advanced Sampler's Guide. \$1350 firm. Call or write: John Mulreman, 19 Mercer Ave., Port Monmouth, NJ 07758. 201-495-9028.

For sale - Mirage (revised version). Perfect condition. 6 months old. Includes 9 factory disks, 10 blanks, MASOS, more. \$1400 or trade for Ensoniq ESQ-1. Joe (215) 698-8424. Philadelphia area.

### SOFTWARE

MIRAGE VISUAL EDITING SYSTEM software for Apple II. Includes Apple disk & Mirage disk. \$150. Call Marcus, (805) 987-9932.

WE'VE GOT THE LATEST music software for the 520ST, C64/128, Macintosh, ILe, and IBM. We sell software by Dr. T, Sonus, Southworth, Unicorn, Syntech, Music Service, and others. Also professional patches for the DX100/21/27, CZ series and Poly 800. Call or write for free information. LEISTER PRODUCTIONS, 806 S. Market St., Mechanicsburg, PA 17055. 717-697-1378.

Macintosh Software for the Mirage! At last, inexpensive software for your Mirage! MirageLib is a multi-function patch librarian and is available now for \$49. Also, SDFileConverter converts 16-bit Sound Designer (TM) files to 8-bit Sound Lab (TM) Wavedata files and sells for \$29. Send your check or Money Order to: Beaverton Digital Systems, PO Box 1626, Beaverton, OR 97075.

Commodore 64 software - Sorry, not for Mirage, but we do have several data storage and librarian programs for your other synths. Patch disks also available. Excellent software at reasonable prices. Atari ST software coming soon! Write for more information. Music Service Software, 801 Wheeler Rd., Madison, WI 53704.

### EMPLOYMENT

Rapidly growing keyboard company looking for representation in Canada. Excellent income, preference given early replies. Send resume to K. S., 110 963 Canada Inc., 5460 Royalmount, Suite 207, Town of Mount Royal, Quebec, Canada H4P 1H7.

Electronic Percussionist/Tech needed to support songwriting duet for performance and recording. Background vox a plus. Exec relatives in music biz also a plus but not required. Leave mess at bleep (914) 235-6576. LWR Westchester Area.

### PATCHES

ESQ-1 owners: 40 new sounds for your synthesizer, on cassette with data sheets, \$25. Also available, an ESQ-1 Patch Generation Program for the Commodore 64 with Sequential or Passport interface, \$20. Jamos Music, 1970 N Hartford #17, Chandler, AZ 85224.

### MISC

Ensoniq Sound Disk Parameter Listings: Turtle Beach Softworks announces it is selling a complete set of ASG style printouts of all sounds on all Ensoniq factory sound disks from #1 to #18. The set costs \$24.95. Send to Turtle Beach, POB 5074, York, PA 17405. Custom listing service available too.

WHY PROGRAM WHEN YOU COULD BE PLAYING?? Patches for DX7/TX7, CASIO, KORG DW8000, ROLAND JX8P/10, JUPITER6, JUNO1/2, 106, expertly programmed on ATARI 1040ST computer. From \$17.95. Demo tape (except Jupiter, Juno106): \$5, refundable - specify synth. LOW prices on ALL RAM cartridges and MIDI hardware/software for MIRAGE and synths. Livewire, Dept. TH, 79 Shrewsbury, Oceanport, NJ 07757 (201) 870-3115.

Aynone using the VDS or the MVES waveform editors for the C-64 please call (206) 241-7825 (Loren) or (206) 329-7281 (Anthony). Loren 3727 S 150th Number C, Seattle, WA 98168. We'd like to hear a hands-on approach review.

### FREE CLASSIFIEDS!

Well, - within limits. We're offering free classified advertising (up to 50 words) to all readers for exchanging or selling your sampled sounds on Mirage-readable disks. Additional words, or ads for other products or services, are 15 cents per word. (Unless renewed, freebie ads are removed after 4 issues.)



# Sound Composer's Series

Sampled Sound Library For The Ensoniq Mirage

The most comprehensive sampled sound library available. Produced by professionals and offered at a price anyone can afford, these sounds are quite simply "the best".

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"Tremendous.... the Mirage has never sounded so good. I was knocked out."

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**Bobby Nathan, Unique Recording, N. Y.**

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**David Frederick, Keyboard Magazine**

"The secret weapon of the Sound Composer's Series is Arne Schulze. Schulze has been able to get a far smoother, warmer tone out of the Mirage than any programmer thus far."

**Jock Baird, Musician Magazine**

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One disk from each set (5 disks)  
-plus-  
one disk for **FREE!** ONLY \$99

**\* Limited Offer \***



Apple Computer has signed a special deal with Ensoniq for the use of Ensoniq's "Q-chip." Apple is coming out with a new version of the Apple II - the Apple IIGS - designed specifically for Graphics & Sounds applications. Certain sounds available in the Mirage sound library will be able to be ported to the new Apple and used for such things as game sound effects. Just what this will mean to Mirage owners is unclear at this time, but we'd expect to see a certain symbiosis between the two machines and their hackers and developers. Developers interested in working on GS software should contact: Apple Developer Relations, 20525 Mariani Ave., Cupertino, CA 95014.

\* \* \*

The people behind the international Mirage User's Group (M.U.G.), G-4 Productions have released a video, "Rock and Roll, Part 1 and 2." It's done almost totally on a Mirage. G-4 says if you see it to send them a brief description (to show that you saw it) and any comments and they'll send you a free disk full of sounds. G-4, 622 Odell Ave., Yonkers, NY 10710.

\* \* \*

TRANSONIQ-NET

The following people or organizations have agreed to help with questions:

MOVING SAMPLES - all over the place. 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 COMPUTER BULLETIN BOARD - Provided by John Connolly of Portland, Oregon for information exchange and file transfer. Phone (voice): 503-641-6260. Phone (BBS/computer): 503-646-2095. Free messages. Yearly membership for upload/download: \$25.

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

MIDI & SEQUENCING - Leslie Fradkin or Elizabeth Rose, MIDI-MAX Studios. Eastern time (NY). Calls between 10am and 9pm. (212) 628-5551.

MIDI & SEQUENCING - Markus McDowell. Any ol' time. (805) 987-9932 (Calif.)

MIRAGE HARDWARE & FIRMWARE - Scott D. Willingham. Eastern time (NY). Days. (716) 477-8089.

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.

SOFTWARE - Paul Braun. (805) 583-5315.

If YOU'RE interested in being listed on the Net, please give us a call. (503) 245-4763.

**ENSONIQ STANDARDIZED  
ESQ-1  
DATA STORAGE FORMATS**

This file structure will be used by the ESQ-1 librarians marketed by Ensoniq. These include Sound File (Blank Software - Commodore 64), ESQ Manager (Turtle Beach Softworks - IBM PC) and future offerings for other computers.

This information is published in the hope that the standard will be used by software developers and the ESQ-1 community can benefit from easy sequence and program interchange. For more information on the various data structures, see the ESQ-1 manual.

Program Bank File:

-----  
File Size : 4161

1 byte (OFFh) flag identifying this as a program block file. 80 bytes header for programmer name, comments, etc. 4080 bytes program block (102 bytes \*40 programs).

Sequence Block File:

-----  
File Size: Variable.

1 byte (OFEh) flag identifying this as a sequence block file. 80 bytes for comments. 306 bytes of sequencer variables. 4080 bytes program block (contains 40 programs). 2 bytes (1 word) containing length of sequence data. N bytes of sequence data.

Single Sequence File:

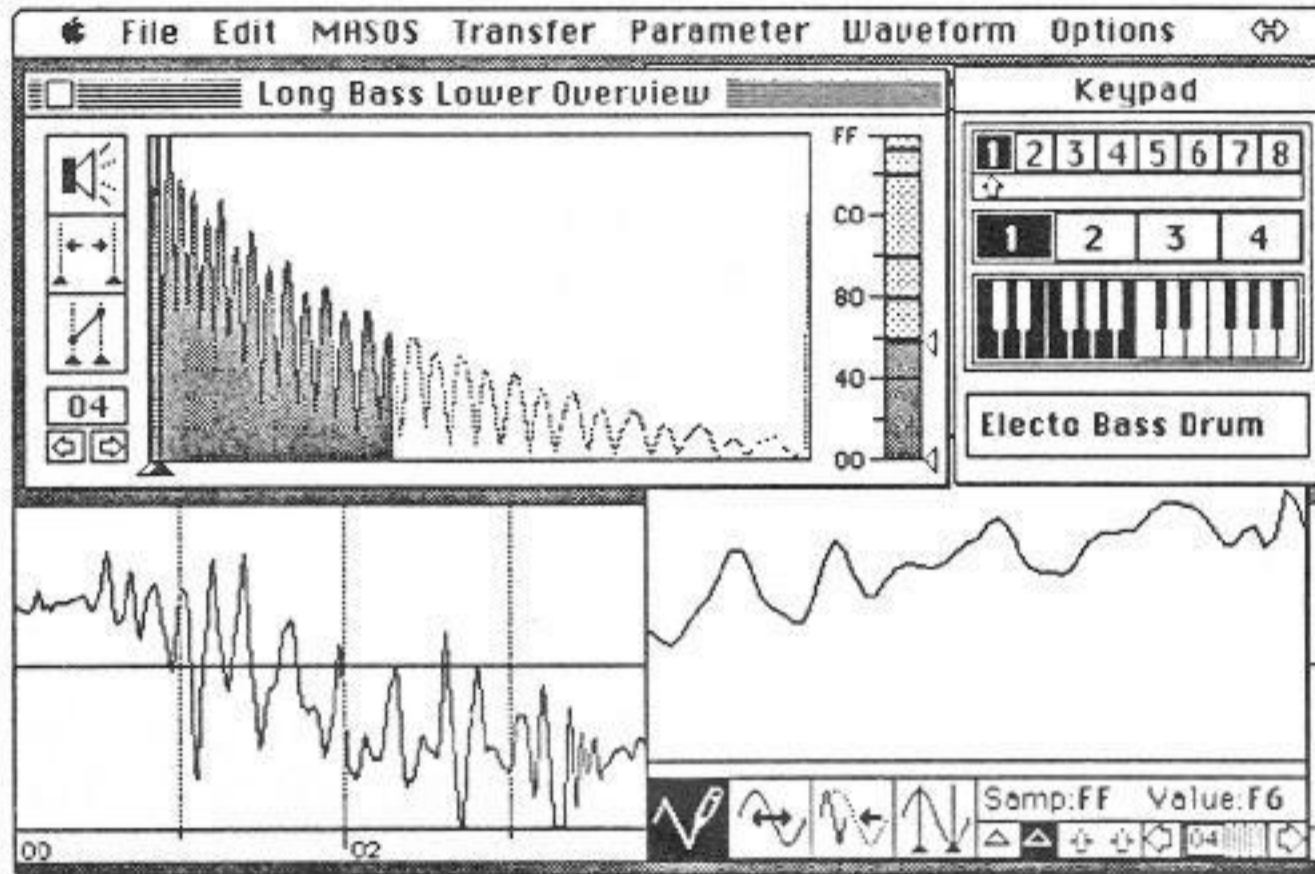
-----  
File Size: Variable.

1 byte (OFDh) flag identifying this as a single seq file. 80 bytes for comments. 2 bytes (1 word) containing length of sequence data. N bytes of sequence data

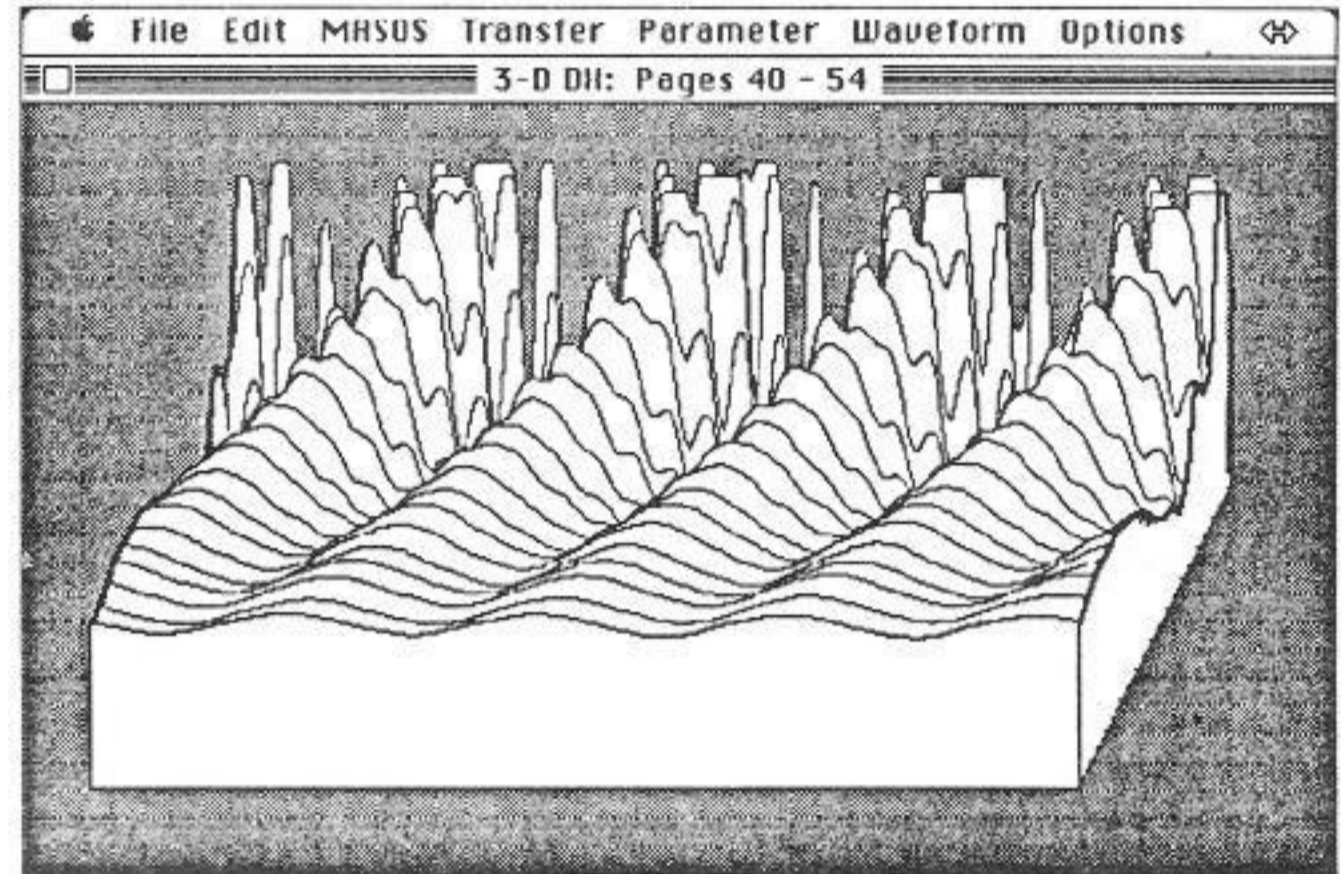
The preferred method of sharing sequences with the world should be the sequence block, since the various programs you are using in your machine cannot be assumed to be the same in anyone else's machine. The sequence block includes a program block, so the sequence will play correctly on the target ESQ-1. It is an easy matter to set up a program bank with just the patches you wish to use in a particular sequence if you have a patch/sequence librarian.

# Sound Lab™

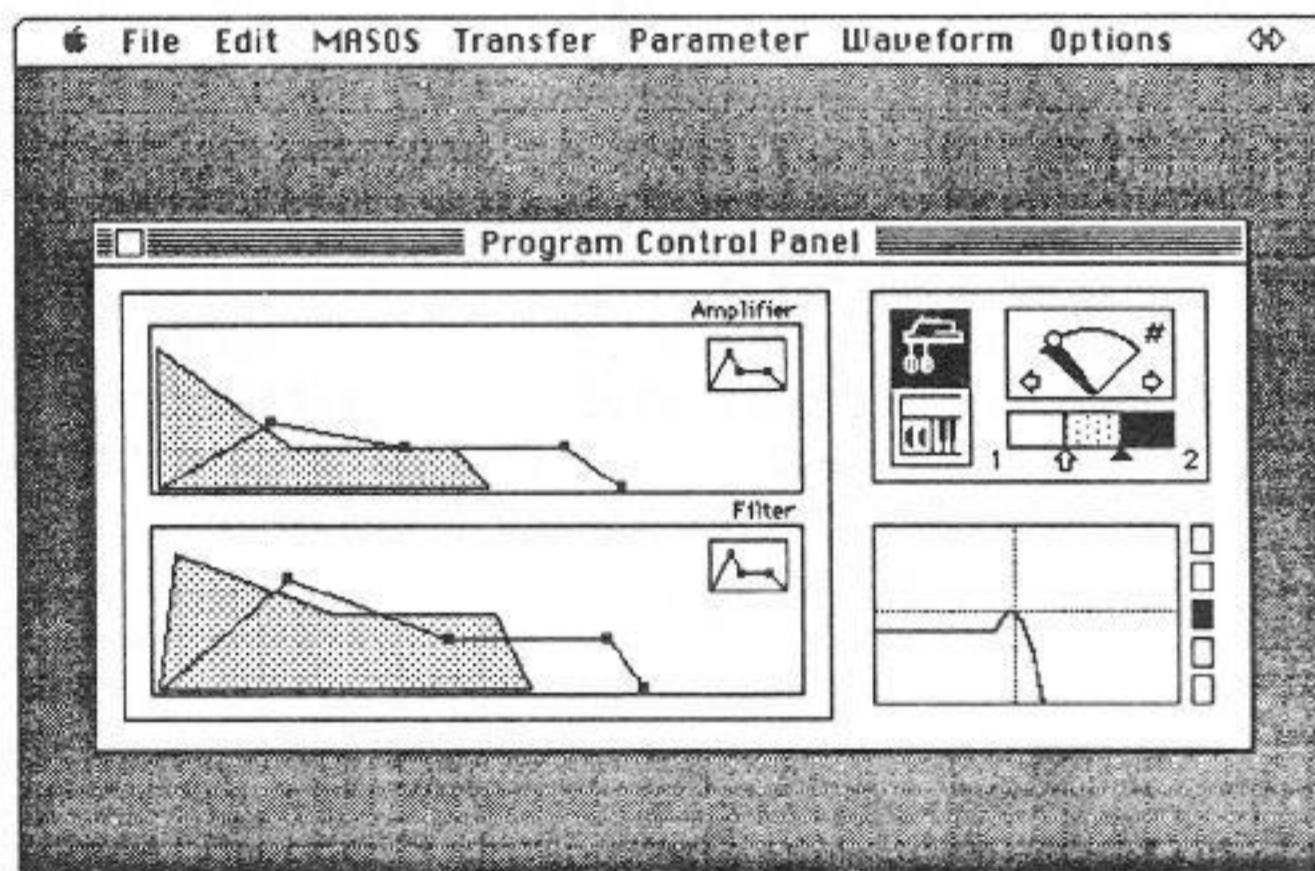
by Blank Software



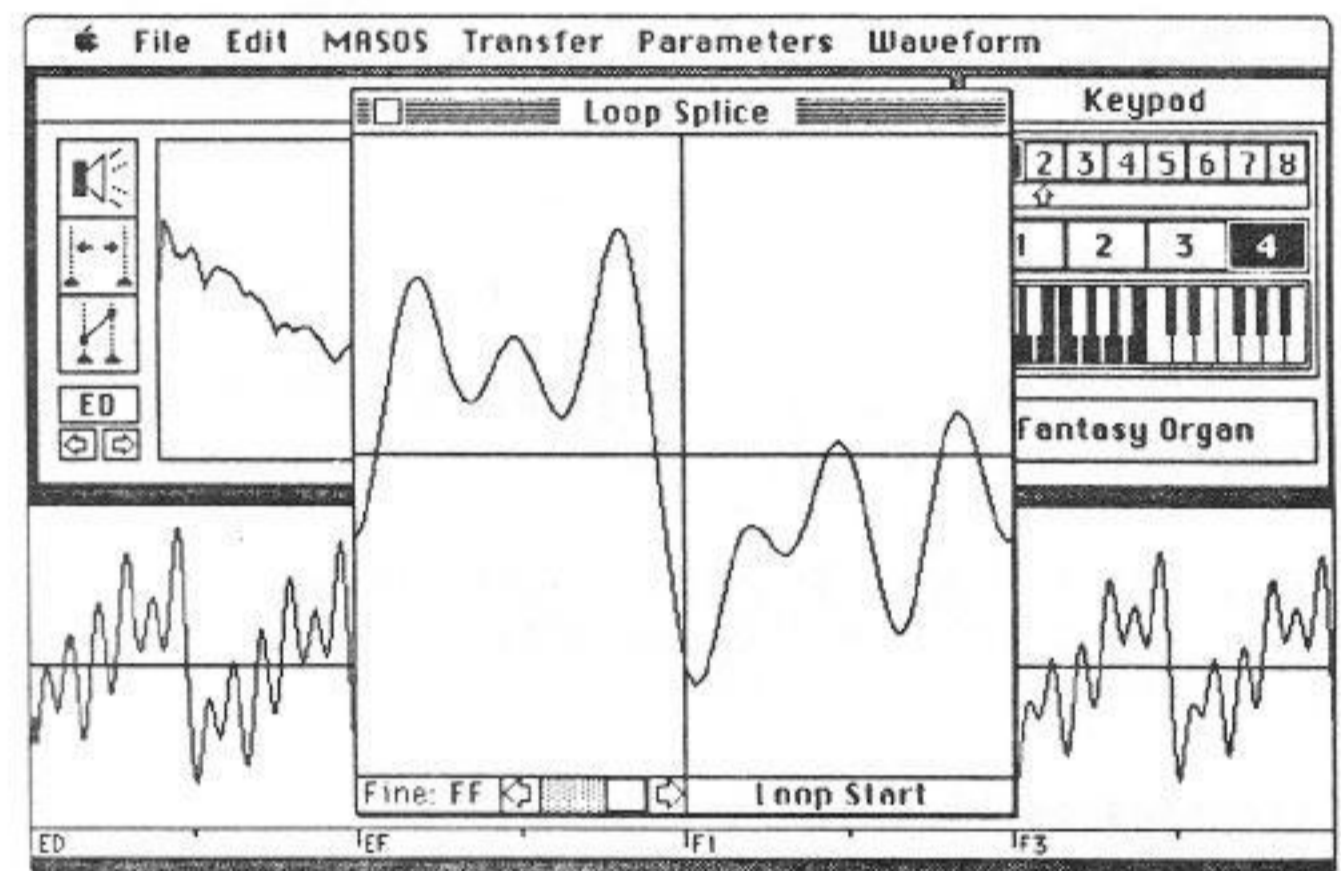
*High-res Waveform Editing*



*3-D Waveform Display*



*Program Voicing Controls*



*Graphic Looping Aids*

Sound Lab is a comprehensive Visual Editing Package for the Ensoniq Mirage and Apple Macintosh. Sound Lab integrates powerful editing and processing, intuitive voicing controllers, high resolution waveform displays, and more.

Sound Lab waveform windows display samples at several resolutions simultaneously, from a total memory overview to a single page blow up. RAM based wavesample memory gives the sampler access all sixteen wavesamples immediately, unlike slower disk based programs. Intuitive mouse-driven voicing controllers eliminate cumbersome hexadecimal keyboard entry, animating voice parameter editing. A complete MASOS implementation provides fast parallel editing and processing without lengthy watedata transfers. In addition, unique features like interpolation and compression dramatically improve sample quality.

Other features include sound file conversion, MIDI merging, 3-D waveform display, MASOS cross-fade looping, Loop Splice, and automated sampling aids.

Designed with the needs of the Mirage sampling musician in mind, Sound Lab remains the premier Mac-Mirage visual editing package. Sound Lab is the only Macintosh visual editor endorsed and distributed by ENSONIQ. For more info contact: Blank Software 1034 Natoma Street SF CA 94103 - Tel: 415 863-9224.



# SOUND REVIEWS

## ENSONIQ SOUND DISK #18

By Erick Hailstone

Hi, everyone. It's been awhile since we've looked at disks from Ensoniq. Well, they've been quite busy, so let's do a little Catching Up.

### Sample 1

Lower: Strummed Piano 1 & 2

L1, although it says strummed piano it actually reminds me more of a bowed string. There is an initial attack that sounds like a string scraped very quickly for a short duration giving way to a cello-like sound which is very even without any vibrato or fluctuation. I can't hear any loop point at all so I assume it occurs quite early. This sound is very usable and quite different. Use your imagination. There are lots of things you can do with it. It doesn't have a really hard edge to it so you can use it for long legato parts. Velocity controls volume and adds brightness with a harder attack.

L2 adds a quick filter sweep giving it a "Qwacky" sort of sound. It's kind of like the scratch sound popular in Rap music, only the melodic pitch of the note is still there. Pretty Funky.

L3 opens up the filter with some filter sweep in the beginning. The overall effect is similar to L1 only BIGGER, OMINOUS.

L4 is the same as L1 only it starts an octave lower and covers the entire keyboard.

### Upper : Unprepared Piano

U1. The attack is crisp and pure like the upper notes of a piano followed by all of the other strings ringing out sympathetically. It's as if you pushed the sustain pedal down while silently holding down the bottom 2 or 3 octaves of keys and then struck some of the highest notes of a piano. It is a wooden, crisp piano note with an undercurrent reverb quality that would indicate one of the largest rooms in the world. In the upper part of the range the frequency is so high that you don't really recognize it as melodic pitch. It seems more like some strange cymbal.

U2 takes U1 and choruses it with a very long downward filter sweep with resonance. It's a subtle variation but quite nice, kind of like the Jet Stream.

U3 is very similar to U1. It does have a resonant peak in the lower end that gives it a meatier sound. Even as it loops it's a bit more intense than U1.

U4 takes away all of the attack of the note so it's almost like a note that's being brushed instead of struck. This is a wonderful texture, all jet streams and no percussiveness. This will be great for Halloween or my next film score, whichever comes first.

### Sample 2

Lower : Hammered Piano

L1 is very similar to a hammered dulcimer. It's kind of a light vibrating sound like the hammers hitting and then coming off and microscopically bouncing 2 or 3 times very quickly. It's not as crisp and hard as a normal piano note. There is a slight reverb effect that has the notes ring into each other.

L2 is the same type sound with chorusing added.

L3 - the attack is softened quite a bit giving it a spongy quality with lots of sustain. Surprisingly, their sample sequence still works with this sound. Even though it would seem to require a percussive attack, the way these notes sustain it's still pretty effective.

L4 is dropped in pitch so much that it is more like a drum. You would use this in the same way as you would you use tympani. It is very similar - only a bit metallic.

### Upper : Fu Yin Gong

U1 is a type of Chinese gong. Kind of a mushy crash with a slight downward pitch. The high range almost sounds like a meow. These things are pitched so you actually play intervals together and get chords. As is often said, a little Fu Yin Gong goes a long way.

U2 softens the attack quite a bit giving a calliope effect. There is a lot of shhhhh in the background (white noise). By the way, different settings of the lower range will give you more or less range in these upper sounds.

U3 takes away the gong aspect of this sound completely. The initial attack becomes more of a percussion instrument, like wooden bars struck by a mallet with a light drop in pitch afterwards.

U4 drops everything so far in pitch that it's just gongland. It's so deep that there is no sense of pitch at all - just a medium decaying gong.

Sample 3  
Lower : Orchestra Tone Cluster

L1 - There are no percussion instruments here. It all seems to be strings, stacked fourths and fifths. There is a very long sustain, almost like an orchestra tuning up before a concert, although the pitches are more definite and related. An effective use of this sound is to play a third on, say, a piano patch in your right hand and play a note with this sound in your left hand. This note will be both the root and the fifth.

L2 is chorused and gives a nice percussive effect like a muted piano being struck by the hammer. There also seems to be a resonant sweep underneath that implies other pitches. It sounds like a melodic phrase consisting of the root, flat seventh up to a minor third.

L3 starts with a long attack. The filter is closed down quite a bit and opens up over time. The amplitude starts low and gets louder as the filter opens up, then drops back down and sustains at the loop point. This is great for your basic space-age orchestra.

By the way L1 & L2 use the same wavesample. L3 & L4 use different ones and hence sound quite different).

L4 covers the entire keyboard. It is more like a string note and can be played in pitch, especially in the bottom range. This is a subdued sound, very

ambient, almost as if we were just hearing a pitched sound coming through the reverb return on a mixing console.

Upper : Opera Gong

U1 is exactly the opposite of Fu Yin Gong. The pitch glisses upward. It does this a little faster so it is melodically a bit more useful.

U2 is again the calliope type affect. It is bit darker than the earlier one.

U3 is a high pitched percussive sound with a little upward gliss in pitch. I like to think of this as whining bongos.

U4 is once again, gongland with a slight upward rise in pitch.

Next month (hopefully), we'll get to Disks 19, 20, & 21. See you there.

## BACK ISSUES

Back issues are available for \$2 each. Some back issues are no longer available in their original printed form and a photocopy will be substituted.

# SOUND DESIGNER™

## Now Available for the Ensoniq Mirage™/Multisampler™!

Digidesign's revolutionary Sound Designer™ Macintosh software is now available for the Ensoniq Mirage and Mirage Multisampler. Sound Designer is the most powerful waveform editing and digital signal processing program available for the Mirage. Compare these features to other Mirage visual editing systems:

**Full Waveform Editing** - Edit sounds using standard Macintosh "cut and paste" style editing, with an editing accuracy of 1/50,000th of a second! Use Sound Designer's "pencil" to draw or repair waveforms.

**Multiple Windows** - Sound Designer is the only system that offers multiple sound windows for displaying and editing up to three sounds at the same time.

**Digital Equalization** - Sound Designer includes a fully parametric, high quality digital equalization program. Used with Sound Designer's FFT frequency analysis, it is the ultimate equalizer.

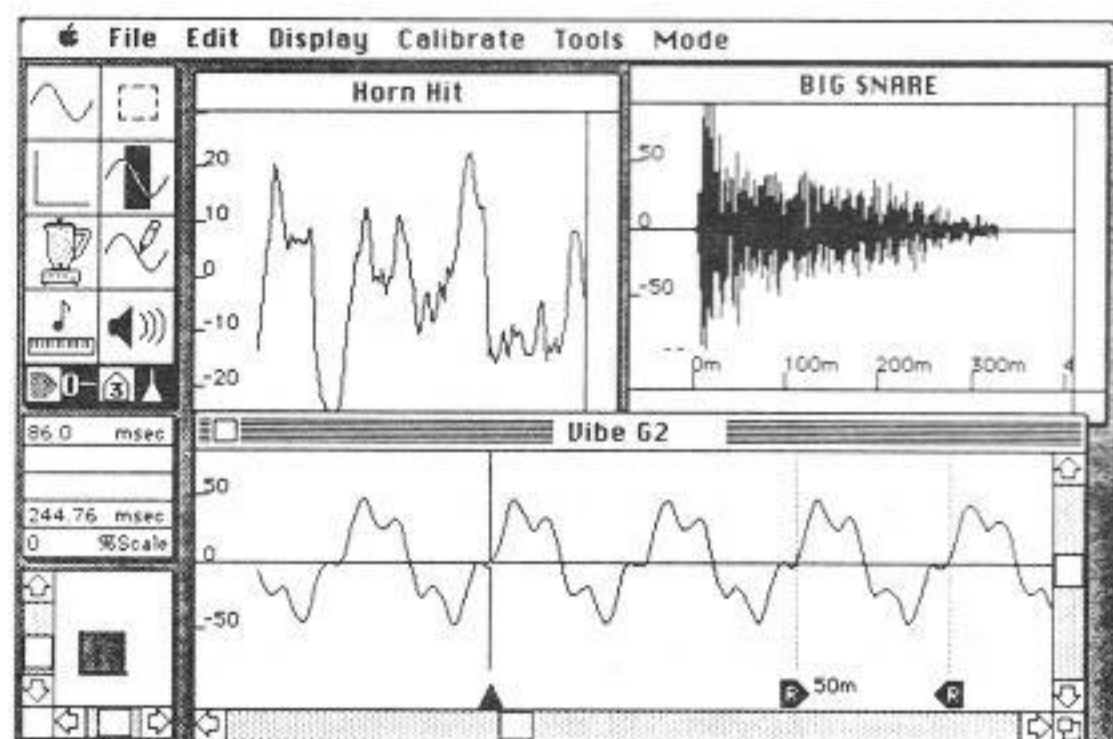
**Visual Looping** - Assign loops visually and fine tune the loop points using the "Loop Window". A crossfade looping program creates a good loop in difficult sounds.

**Digital Mixing and Merging** - Digitally mix samples in any proportion, or use the Merge function to create new, unusual sounds by "merging" sections of samples.

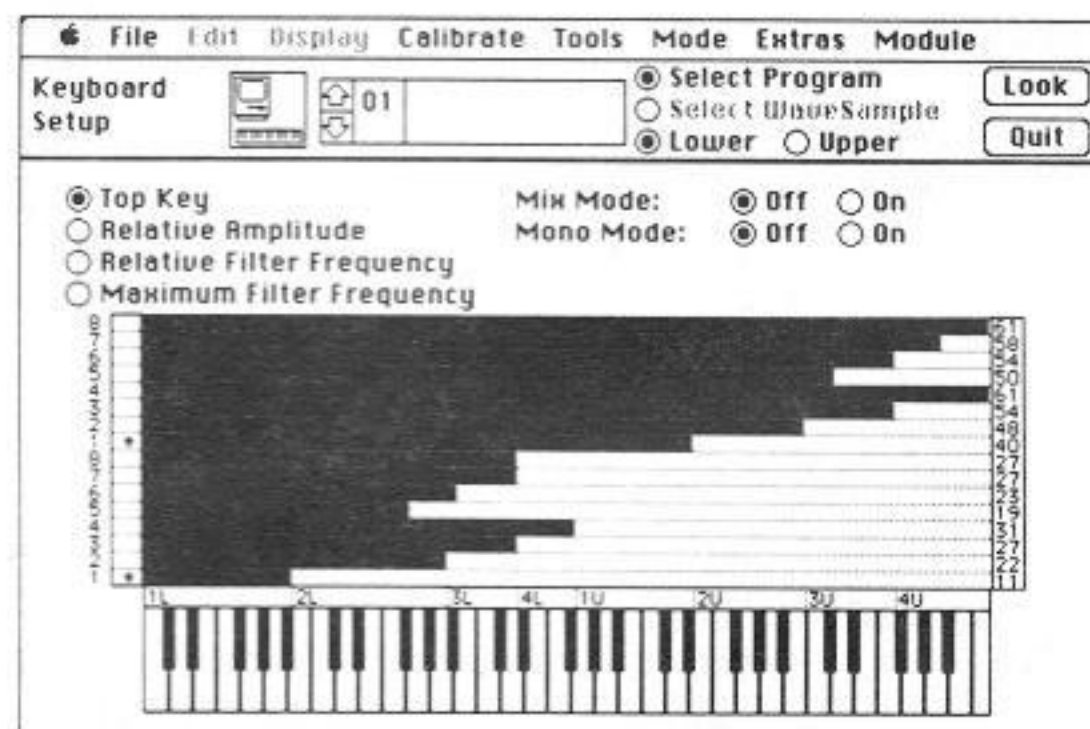
**Digital Synthesis** - Another Sound Designer first. Digitally synthesize sounds on the Macintosh, then transfer them to the Mirage for playback!

**Mirage Programming Screens** - Of course, Sound Designer includes a full complement of graphic programming screens for all Mirage functions (including a complete MASOS module). These screens alone perform virtually all of the functions found in other visual editing systems! If you have a rack mount Multisampler, Sound Designer includes an on-screen MIDI keyboard/sequencer to "play" the Mirage.

Sound Designer is the most powerful visual editing/processing software available for the Mirage. But don't take our word for it! Send us \$15, and we'll send you a pair of demo disks (Macintosh). We think you'll be quite amazed.



Multiple Waveform Windows



Keyboard Setup

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# HYPERSOIQ

NEW PRODUCT RELEASES

Turtle Beach Softworks announces the September release of ESQ Manager, a sound and sequence librarian for the Ensoniq ESQ-1 and IBM PC/XT/AT or compatible. ESQ Manager provides librarian functions for programs and sequences, allowing copying and cataloging of sounds. Banks of programs and sequences can be saved using the PC's disk storage for unlimited capacity. ESQ Manager uses the Ensoniq standard file formats for its disk files. This feature will make it possible for users of all Ensoniq librarians to share sounds and sequences easily. An ESQ-1 program view page is provided which shows all parameters of a sound on one screen, which can be printed or saved to disk. ESQ Manager also provides a live performance oriented "loader" for moving program banks or sequences into the ESQ-1 during performances. It requires DOS 2.0 or greater, 256k memory and a MIDI interface. List price is \$99.95 and is available at Ensoniq dealers worldwide. For more information, contact Turtle Beach at POB 5074, York, PA, 17405

Northstar Productions has announced that they have joined forces with the Hacker's own Clark Salisbury to produce a non-factory library of sound disks for the Mirage and the Multisampler. "We have hundreds of sounds available that were originally done for Northstar's very successful Emulator II library. We'll be taking the best of those and getting them in shape for the Mirage", says Clark. Address inquiries to Northstar Productions, 13716 S.E. Ramona, Portland, Oregon, 97236. (503) 760-7777.

DIGIDESIGN announces SOFTSYNTH. Softsynth is a revolutionary new approach to synthesis: an advanced, 32 oscillator digital synthesizer that creates high quality digital sounds using software-based synthesis. Sounds can be "designed" using Softsynth's graphic programming screens, then synthesized by the Macintosh and transferred to a digital sampling keyboard (Mirage, Multisampler, Emulator II, Emax, Prophet 2000/2002, Akai S900/S612). Softsynth is a digital additive synthesizer. Additive synthesis is a very powerful, flexible digital synthesis technique capable of creating a wide range of sounds. Softsynth provides precise control over all additive synthesis parameters: each of the program's 32 oscillators/harmonics has a 40 stage amplitude envelope, 15 stage pitch envelope, selectable wave type, and variable frequency. For more information, contact Digidesign, 920 Commercial, Palo Alto, CA 94303. (415) 494-8811.

## HARMONICA/SYNTH

By Erick Hailstone

Here's our first ESQ-1 Patch: I started off using my Harmonica sample on the Mirage as a guide. This is a technique I often use when programming a DX-7 or Casio CZ 101. Quite often along the way to the finished patch I end up with several useable variations. This is one of those. It has a high metallic harmonic that doesn't exist in a real harmonica. It sounds very similar to a DX-7 patch used on the solo in Tina Turner's tune, "What's Love Got To Do With It?". It can be a very expressive solo voice and I hope you all have fun with it. In the split/layer box there is a suggestion. Try it out and experiment on your own.

### ESQ-1 PROGRAM SHEET

PROGRAM: SYNTH HARMONICA

	OCT=	SEMI=	FINE=	WAVE=	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	+0	00	00	SYNTH3	EFD1	05	OFF	00
OSC 2	+0	00	01	SYNTH3	LFD1	05	OFF	00
OSC 3	+3	00	09	NOISE1	LFD1	05	OFF	00

	LEVEL=	OUTPUT=	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	On Off	OFF	00	LFD1	00
DCA 2	49	On Off	OFF	00	LFD1	00
DCA 3	31	On Off	ENV2	63	OFF	00

	FREQ=	Q=	KEYBD=	MOD#1	DEPTH	MOD#2	DEPTH
Filter	62	00	29	ENV3	00	LFD1	00

	Final Vol.(ENV 4)	PAN=	PAN MODULATOR	DEPTH
DCA 4	63	08	OFF	00

	FREQ=	RESET=	HUMAN=	WAY=	LI=	DELAY=	L2=	MOD=
LFO 1	21	On Off	On Off	TR1	00	00	21	WHEEL
LFO 2	63	On Off	On Off	NOI	63	63	63	WHEEL
LFO 3	16	On Off	On Off	NOI	00	01	20	WHEEL

	L1=	L2=	L3=	LV=	T1V=	T1=	T2=	T3=	T4=	TK=
ENV 1	-06	+00	+00	63	00	00	06	63	20	09
ENV 2	+07	+02	+45	00	00	20	09	63	20	09
ENV 3	+63	+00	+00	26	00	00	18	00	20	00
ENV 4	+63	+63	+63	32	00	05	29	52	20	09

	SYNC=	AM=	MONO=	GLIDE=	VC=	ENV=	OSC=	CYC=
Modes	On Off	On Off	On Off	00	On Off	On Off	On Off	On Off

OPTIONAL:

	Split/Layer=	Split/Layer Program	Layer=	Layer Program	Split=	Split Program	Split Key=
Split/Layer	On Off		On Off	PLKBRS	Off Lower Upper		

## ESQ 1

40 Sounds for the ESQ 1  
from  
CLARK SALSBUURY & ERICK HAILSTONE  
ONLY 39.95

Specify Tape or Mirage Diskette  
Send Check to:

The MIDI Connection  
7280 SW 104th St.  
Beaverton, OR 97005

By Joseph Palmer

Perhaps one of the most misunderstood things about the Mirage is the subject of user sampling of sounds, and in particular, the use of the Input Sample Filter (ISF). I have attended several sound swaps for the Mirage keyboard and rackmount. Invariably, lots of questions arise as to what the Input Sample Filter is, what it does, why do I need one, and my favorite, "How do I use the one I just bought?" I shall try to cut through all the noise and distortion and explain.

**What It Is:**

The ISF is a single printed circuit assembly within a small plastic enclosure. This is the very same enclosure used for the sequencer memory option, and goes in the same connector on the back of the Mirage. The ISF can't be used at the same time as the sequencer expander, and must be used with the MASOS operating system (which does not contain a sequencer anyway). The ISF has a short piece of cable which terminates in a 1/4" in-line receptacle. This receptacle is the input to the ISF, and is for unbalanced line-level signals only.

**What It Does:**

Audio signals presented at the input are filtered through a low-pass filter, sampled by an A-to-D, (which is contained in the ISF) and stored in the Mirage memory. The ISF A-to-D has a higher maximum sample rate than the internal A-to-D, but otherwise does the same function. The ISF input filter has a cut-off slope of nearly 150 dB-per-octave. The Mirage internal filter has only a 24-dB-per-octave slope. (Where did I lose you?)

**Choosing A Filter Setting:**

Before a user can choose a filter cut-off frequency, they need to know a few things about filters, sampling theory, and how the Mirage outputs the samples. The "perfect" filter setting is a function of the input sample rate, the harmonic content of the sound, and the output "tuning" range.

**Low Pass Filters 101 :**

A low-pass filter has two basic parameters: 1) Cut-off frequency, and 2) slope. The cut-off frequency is specified by the frequency at which a sign wave signal is reduced to one half of its non-filtered power level. This is commonly called the 3 dB point. The slope is specified by the signal level one octave higher than the 3 dB point. A low-pass filter with a cut-off frequency of 1 kHz and a slope of 24 dB/octave will cause a signal of 2 kHz to be attenuated by 27 dB. (24 dB for the octave between 1 kHz and 2 kHz, and 3 dB for where the measurement begins.)

**Sampling Theory**

Nyquist (mathematics wizard - spent a very great deal of time thinking about sampling theory) states that

all information below 1/2 of the sampling rate is retained, and any information above 1/2 the sample rate is retained as ALIASED information. The basic goal in sampling is to store as much information in the the memory as possible, without storing any alias information. The trick then, is to only let the A-to-D see information that is less than 1/2 the sample rate. The way to achieve this is to filter the incoming signal so that all data above 1/2 the sample rate is removed. The Mirage stores samples in an 8-bit format, which means that the stored sample has, at best, a 48 dB signal-to-noise ratio. Any signals that are 48 dB down from the maximum amplitude are lost in the noise of the sample size. The setting to pick is the one which will reduce the input signal by just greater than 48 dB at 1/2 of the sample rate. Reducing by more than 48b dB at the 1/2 sample rate will not significantly reduce aliasing, and will throw away information you could have stored (and played back) on the Mirage. A simple rule of thumb for the ISF is to multiply the cut-off frequency of the filter by 2.6 to get the minimum sample rate. This is 1.3 to get more than 48 dB of attenuation at 1/2 the sample rate, times 2 to get the whole sample rate. This formula works well for all samples that will be played back at only their original frequency. I've used this formula to record a 4.5-second "hit" from a compact disk at a sample rate of 14492.75 Hz and a ISF cut-off frequency of 5680 Hz. Despite the low sample rate, and long sample time, the resulting sound has a sound quality about the same as AM radio! The same sample without the ISF would have cut off two octaves lower, at 1420 Hz, and sounded muffled, at best. The "hit" is the first few bars from the Talking Heads song "Once in a lifetime" and I've looped it to sound like the original song. You should see the looks I get at sound swaps when the song splashes on and just keeps going and going!

**How The Mirage Uses The Samples:**

The Mirage uses a table lookup algorithm to output waveform data. What this means is that the Mirage outputs a sample from the waveform memory for each digital oscillator once every 34 microsec, for an output sample rate of 29411.76 Hz. It does not matter at what frequency the input was sampled, the Mirage just outputs whatever it finds in the wavesample. How then, you may ask, does the Mirage tune the samples? It either occasionally outputs the same sample twice in a row to lower pitch, or skips samples now and again to raise the pitch. The determination as to which samples to skip or repeat is not quite that haphazard, it's actually a simple rounding problem handled by the Q-Chip. For example; to lower the pitch of of a 256-sample single-page loop 1/256 of an octave, output an extra sample each time through the loop:

0, 0, 1, 2 ... FE, FF, 0, 1, 1, 2, 3 , ... FF, 0, 1, 2, 2, 3...

The rounding will cause the extra samples to be evenly spaced around the loop, which reduces noise

and distortion. Raising the pitch is a similar process, with samples skipped by the same rounding.

#### Table Look Up Aliasing

This method of changing the pitch by skipping samples causes an interesting, yet annoying problem for the sampler. Nyquist's Theory states that approaching the upper limit, only just barely more than two samples are required per cycle to represent a waveform. The case of exactly two samples per cycle also works, but only if the samples represent the peaks of the waveforms. A single-page loop of 256 samples could represent 128 sign waves and could literally be alternating samples of +127 and -127. This pattern of samples, when run through a perfect low-pass filter, will produce a perfect sine wave at 1/2 the output sample rate. Now imagine trying to raise the pitch of that loop by skipping samples. Skipping just one sample per loop will cause two samples of +127 to come out in a row on the first pass through the loop and two samples of -127 to come out on the next pass. The effect of these skipped samples is to add a distortion signal to the output at a frequency equal to the output sample rate divided by 256, or 114.89 Hz. The same effect also appears when you lower the pitch by hitting the same sample twice in a row each time through the loop. It is therefore not possible to store the ultimate amount of harmonic information in the memory and alter its pitch without adding alias distortion, but it is possible to calculate just how much information can be stored to achieve a balance between harmonic content and distortion. Suppose you wish to have a sample which is played back up to one octave higher and one octave lower than the sampled pitch. If you set the filter following the rule for unity playback, the memory would contain harmonic information that would alias during non-unity playback. If you were to set the filter one octave lower than the 2.6 value, those harmonics would be filtered out before they got to the memory, and you could raise or lower the pitch by an octave without distortion. A pure sine wave in a loop can be shifted up in pitch to the point where you skip nearly all but two samples. (This requires a perfect output filter, and they can't really exist.) The sine wave can be shifted down many octaves in pitch until the frequency begins to approach D.C.

#### Choosing Sample Rates:

When I sample, I normally select the sample rate first. For single-page loops, the sample rate is a function of the frequency of the input signal frequency. A sample rate must be chosen to place an even number of cycles of the input signal in a 256-sample page. Remember to not use the last page of a wavesample in a short loop. The Mirage automatically puts zeros in the last 16 bytes of each wavesample and if you try use the last page in a loop it will make a buzzing, raspy sound during playback. Sample rates may also be chosen to fit sub-harmonics into multi-page loops. (I use my tuning standard, see T.H. Issue #9, Page 3.) For long loops or one-shot sounds, I select a sample rate

based upon how long the sound is, how much harmonic information I wish to retain, and how much memory I can allocate for the sample. All of these variables change from sound to sound, and no simple formula can be given.

#### Choosing Filter Settings:

For sounds to be played back only at unity frequency, chose a filter setting so the cut off is .385 of the sample rate. (Or choose a sample rate 2.6 times the cut-off frequency.) For samples spread over many keys, the sample rate must be multiplied by one plus the number of octaves the sample will be shifted, or conversely, the filter cut off must be divided by 1 plus the number of octaves the sample will be shifted. Remember, a sample can cover one whole octave by shifting up half an octave and down a half octave, and the maximum shift is still only half an octave. Remember to include the octave select if you plan to re-tune the sample.

#### Artistic License:

The formulas I have presented here are just general guidelines and must not be taken as rules that may never be broken, or at least bent a little. Every time I've come up with a rule, I can find a musically acceptable exception to that rule. Things that I sampled all wrong can often come out sounding quite all right, but perhaps not what I had in mind when I hit that Sample Upper button.

Biography: Joseph Palmer is a design engineer (Inventor) who lives in the very heart of Silicon Valley with his cat "Eno" and one of the early Mirage keyboards. He built his first Input Sample Filter from scratch when none were yet available from Ensoniq. He has since retired that unit in favor of the Ensoniq ISF. He is now working on a reverb unit and modular mixing desk, and is as always, looking for that perfect Fender Telecaster.

## CHANGE OF ADDRESS

Please let us know at least four weeks in advance to avoid missing any issues. The Post Office will not reliably forward this type of mail. 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!)



# THE INTERFACE

Dear Hacker,

It has been just over a year since I purchased my first Mirage. I took it with me to perform a new piece at the New Music America Festival in Los Angeles, last November. Since then I have purchased a Mirage for the Electronic Music Studio, and another rack-mountable Mirage.

The Hacker has been a valuable source of info. Having worked with the Emulator II+ and the Kurtzweil (but not the Akai) I still think the Mirage is not only the best buy by far and the most portable, but also the best teaching tool. Combined with Sound Designer and Sound Lab, it is truly powerful.

Enclosed is a copy of a "data sheet" which I made up, since the ones in the Advanced Sampler's Guide were cumbersome and hard to use.

Yours,

Ivan Tcherepnin  
Harvard University

[Ed. - No room to reproduce the data sheet. Are you open to sending copies to people that are interested in using them?]

Dear Sirs;

I have a few questions:

1- If you want to play the Mirage from a DX-7 keyboard (MIDI), can you set it so that the after-touch keyboard sensitivity of the DX-7 introduces the modulation (usually added with the mod wheel) on the Mirage?

2- In Issue 10, you mentioned a future product from DigiDesign that will allow the transfer of samples between the Mirage, Emulator II, and Prophet 2000. Presumably, there's going to be a loss of quality going from something like the Emulator to the Mirage, since the Mirage can't handle a comparable length sample or frequency response. I'm curious, though, whether Mirage samples will sound as good on the Prophet 2000 as they do on the Mirage, and vice versa. Also, besides a Macintosh, exactly what combination of software and hardware is required to accomplish this?

3- According to the Mirage manual, the pitch bend wheel is supposed to default to a minor third interval, but it's flat, and it has been on three different (old) Mirages I've played. Is that normal? Do new Mirages have that problem?

4- On the same subject, the manual says that pitch bend is supposed to be adjustable up to one octave up and down, but mine will only go a major seventh up

and about a minor seventh down. Again, is it normal, and are current units the same?

5- You mentioned in Issue 12 that you don't want to encourage purchases of back issues because it's too time-consuming. Why not consider a single special-orderable (higher-priced) publication in which you would reprint those sections of the past issues that users would still find relevant and useful? You could do that on an annual basis, and, assuming your readership is continuing to increase, I would think it would be quite popular.

Thanks for your help.

Sincerely,

Scott Harris  
Bedford, NY

[Ed. - Regarding comment #5 - We're toying with the idea of such a publication. Again, it's a matter of finding the time.]

[Ensoniq - #1: Yes, on Operating Systems 3.0 and higher. All MIDI modulators are supported. #2: We wouldn't expect this to work very well without tweaking the data. Our loop markers are different. Also, all of the analog parameters must be adjusted properly and neither the Emu-II nor the Prophet 2000 have our mix-mode or sufficiently flexible envelopes - the key to many Mirage sounds. #3: OS 3.0 and higher increased the sensitivity of wheel centering. Old pitch wheels may need to be re-adjusted. #4: Again, check your O.S. You should be using 3.0 or higher.

Hello Hackers,

I would like to introduce all Mirage users to the Canadian MIDI Users Group.

We are an independent group of musicians, programmers, technicians and teachers dedicated to the exploration of all MIDI applications. Our aim is to exchange information and ideas about the use of all MIDI related products, both in the software and hardware fields. Our C-MUG newsletter, (which looks a lot like the Transoniq Hacker) includes new product announcements and reviews, tips on interfacing, programming techniques, questions and answers, studio tricks and information on computers and software developments from MIDI users around the world.

In September of 1986, C-MUG will come on line with a modem Bulletin Board Service - MIDILINE - which will bring all our MIDI users as close as the telephone.

We have many users who are swapping sound patches

through the Users Group, not only for the Mirage, but for all MIDI synths, i.e., DX-7/TX7, JX-3P/8P, Juno-106, DW8000, Casio 101, etc.

For those Hackers who have not seen our ad in the classified section of "Keyboard" magazine, we are offering a free sample of our C-MUG newsletter when you send your name and address to: Canadian MIDI Users Group, P.O. Box 1043, Belleville, Ontario, Canada K8N 5B6.

Please list us in the MIRAGE-NET under MIDI USERS- Eric Baragar, Canadian MIDI Users Group, (613) 962-0549 Eastern time (Toronto, Ontario area). Business hours.

We find the Transoniq Hacker to be an invaluable publication necessary to keep up with the ever growing Mirage operating system, diskette library and sampling techniques.

Keep up the good work!

CMUG  
Belleville, ONT

To the technical advisor,

About nine months ago I bought a Ensoniq Mirage keyboard. I was really impressed with its key touch sensitivity and the great potential for the machine. But I have run into a technical snag!

1. I have a B.B.C. (British Broadcasting Corporation) Master Series Computer. What I have been trying to do is get an interface to couple the computer and the Mirage together.

2. The computer does have a user input-output port, also a 1 MHz Bus port. It does also have a RS232-C (or V24) interface, but alas this serial port does not quite reach the MIDI's 31-25K Baud Rate. Yes, it does have a 4800 Baud rate, but this cuts it off from being able to be used with other synthesizers while it is coupled with the computer. So if you know how I could make up an I.C. board to couple the computer and the Mirage I would be thankful.

3. Why don't I use existing interfaces? Because they don't seem to be catered to the musician who uses written notation, e.g., sheet music. I hope to write my own software for the computer to the Mirage.

4. I would be able to play the music on the Mirage and it would come out in written form, also I could have displayed on the screen all the Mirage's waveforms and settings. I do have the Advanced Sampler's Guide, so I'm set to go for the hardware. If you could help me I would be thankful. A set of plans or wiring diagrams would be all I would need. Please reply as I have been trying for a long time now.

Yours faithfully,

Mr. P. Gilbero  
Southland, New Zealand

[Ensoniq - Regardless of what you think of a certain software package, the hardware interface can still be used with whatever software you write. Surely someone has designed a MIDI interface for the BBC computer?]

Dear Hacker,

Having recently seen the development of E-Mu Systems transmission of their digitized samples to hard disk, I am wondering if now is not the time to develop a standardization of digital sound data transfer for use between sampling instruments. The potential benefit is enormous in terms of musical gain, and would make it possible to benefit from other sampling devices.

From a business standpoint it would create a division of telecommunications for the companies, so that they could charge a fee to access queued library sounds at a certain billable rate for a given length of time.

#### CONSIDERATIONS

##### I. MIDI Protocol agreement.

###### A. MIDI Interface Bus Agreement:

1. Status Bytes with most significant bit #7 set to 1.
2. Data Bytes with special character standardization.
3. Size, amount of the Status Bytes that are sent between the Data Bytes.

###### B. MIDI Message Standardization:

1. Channel Message data byte size, blocking, with note-on note-off coordination.
2. Control Change Message.
3. System Message with exact synchronization.
  - a. Enhancements are necessary to timing clock so that an agreement of 24 beats per quarter note, or whatever is decided at the NAMM (1986) is adhered to for data storage.
  - b. Active Sensing message determination, with 300 millisecond pause.
  - c. Stop Message Standard.
  - d. System Reset Message Standard.

###### C. MIDI System Exclusive Messages.

1. Status Bytes Standardization.
2. Method of termination of the System Exclusive Mode in order to Transmit Transparently outside of this.
3. EDX not recognized for Same Manufacturer.

###### D. MIDI Hardware Chips used for Transmit, and detailing of the Timings used by the PIN #40 "1.0 MHz Master Bus Clock."

###### E. Explanations of the "E Clock" high and low terms and if there are considerations to be made when converting to a high speed serial

port for common telephone line transmission.

- II. What is involved when a write occurs as to the TXD and RXD direct communications at 4800 baud.
- A. Can this be slowed down to 2400 baud?
  - B. Buffering considerations with one LSTTL-load to hard disk.
  - C. Any possibility of accessing IBM-PC Intel which requires a IORC (input/output request)
  - D. Write operation on 640k RAM with IBM'S "SYSIORC" (input/output read) and "SYSIOWR" (input/output write)
  - E. Upgrade considerations of the TXD and RXD in the future?

- III. When is the RES (negative-active power reset) implemented?
- A. Restart error checking protocols.
  - B. Other error checking considerations.
  - C. IRQ interrupt code.
  - D. Detail the Lockup of an External Interrupt, and if software could be made to cycle count instead of Lockup.

IV. On the IBM-PC there is a multiple segment program that presents a known problem with the interrupt operation, and that is there is no processor pointer to tell what it was doing before the interrupt occurred, thus a need for intra-application communication with an EQI built into Ensoniq's OS. Any possibility of this happening?

V. Running the data transfer to hard disk with on-board Mirage Retrieval, or giving LED, and Parameter Control to VES in SYNTHASSIST at the command level for these functions. Please detail so that I might not conflict with the VES known protocols.

VI. Any plans by you to enlist standardized encoding methods through the International MIDI Assoc. with other manufacturers of Samplers?

VII. I plan to start the blocking with 4096 bytes on the IBM-PC HARD DRIVE. Please comment on this.

VIII. Any known algorithms for quantization of the relative timing bytes previously mentioned.

I think that an effort in this transmission and operating system command transfer is crucial for Ensoniq at this time and I feel that my experience with Data File Transfer between Micros and Minis is a good place to jump in from. Please inform me as to any assistance you might be able to provide in the above mentioned areas.

Thank you,

Chris Meyer  
Systems Analyst  
Hoffman Estates, IL

[Ensoniq - Re consideration ID - irrelevant to MIDI.]

IE - not relevant to data communications. IIA - no. IIB, C, and D - Direct connection of busses would be practically impossible. III - power on only. IIIC - O.S. doesn't recognize external interrupts. V - Hard disk transfer over MIDI would be ungodly slow. VI - If you mean sample data encoding format, no. Many of your other considerations (if we understand them correctly) either don't apply to MIDI or can't be answered at this time.]

Hacker,

I know how to "uncover" 24 sounds that are already there on the disk, but how do you put them there? (Organ L1, Piano, L2 Elec, Piano L3, etc.)

P.S. There's no "Authorized Dealer" in my area. I'd like to fix that loose high C key. What should I do?

Dennis Provisor  
Stevens Point, WI

[Ensoniq - Use a different initial wavesample setting for each of the programs. For factory authorized service which doesn't void your warranty, you must return your Mirage to a factory authorized service center. There are authorized dealers in your area - Henri's Music in Green Bay and Appleton, WI. Since you chose to purchase from Guitar Center (Los Angeles), however, we recommend that you contact them regarding service.]

Dear T.H.

I recently purchased the Mirage unit minus the keyboard and have an order in for the ESQ-1 keyboard. (Store says 3 months waiting list). After getting the unit home, trying to hook it up, following the non-existent directions enclosed with the unit, and the rundown the store gave me, I had no luck. Then I found your issue of Hacker and the Mirage-Net list. By this time, it was 10:30 p.m. Since most of the people were on the East Coast and I was in Vegas, I could not venture a call for help. But, lo and behold, there was Markus McDowell in Ca. and a quick call found Markus ready, willing, and able.

I purchased the Mirage and hooked it to the Roland Juno-1 keyboard. After reading cover to cover I think I have opened a can of worms. I am an older musician, 49, and I do my single bit in supper clubs and classy restaurants. This is my first baptism to MIDI and sequencing. I have to admit I'm lost.

What I hope to accomplish is to pre-record tunes on diskettes, playing each part separately and playing along on stage. According to the clerk at the store where I purchased the equipment, I should be able to pre-record 10 tunes on a single disk and play back on stage and be able to add to the recorded disk on stage. He says with the Mirage panel and the ESQ-1 I have a 10,000 bit memory, which is enough for 1 tune and the ability to encode each tune on a disk and 10 tunes to a disk. At present I use a 3 keyboard

Yamaha 415 organ, Roland Juno-1, Roland TR-505 drum machine, the Mirage, and, when it arrives, the ESQ-1 keyboard. Your help with sources for information on ways to accomplish this, if it is possible, will be sincerely appreciated.

Hope you can help,

Ron Trent  
Las Vegas, NV

[Ensoniq - If your Mirage didn't come with a user's manual, we will gladly send you one. We haven't had any complaints on connecting the Mirage rack. Since the rack is essentially a receiver, it falls on the master keyboard to explain how and what it transmits.

It's a good idea to first understand the difference between using the rack as a sound generator, using its internal sequencer and using it as a storage medium for ESQ-1 sequences. The built-in sequencer in the Mirage can play parts using whatever sounds are loaded into the Mirage. Up to 8 of these sequences can be stored on a disk. The Mirage sequencer is not nearly as comprehensive as the sequencer in the ESQ-1, nor does it have nearly as much memory. The Mirage sequencer can hold 333 notes and can be optionally expanded up to 1333 notes. However, only 3 expanded sequences can be stored on a disk. The sequencer can only hold one at a time and must be reloaded every time you switch the power off. The ESQ-1 sequencer can hold up to 30 separate sequences and up to 10 songs, which are chains of sequences. It retains memory when the power is off. The standard memory capacity of the ESQ-1 is 2400 notes but an optional cartridge expands this to 10,000 notes. If you use up all of the memory, or wish to create a library of your sequences to load at a future time, you can save the ESQ-1 sequencer memory to tape or to a Mirage. In this case, the sequencer data is treated as sound data, so only 3 banks of sequencer data can be stored on a disk. Note that when you load ESQ-1 sequencer data into the Mirage and transfer it back to an ESQ-1, you must reload the Mirage with a sound disk in order for it to make sound. The ESQ-1 sequencer provides multiple tracks which can be set to play internal voices or external MIDI instruments such as the Mirage. This makes the ESQ-1 ideal as the center of a MIDI system. Both the Mirage and the ESQ-1 allow you to play live on the keyboard while their sequencers are playing.

Dear TH:

After reading parts II and III of your Tom Metcalf interview, I see that my comments about it were premature. An excellent job by Richard Boulanger and Tom Metcalf, too.

A new question: What effect, if any, does dry ice or chemical smoke have on the Mirage in particular and keyboards in general if there's a lot of it and it's aimed close to the keyboard itself? One club in particular that we play regularly has a Chemical Smoke machine with a strong perfume-like odor, but

the man who runs it says it "leaves no residue." I want to be sure.

Thanks a lot!

Dave Caruso  
Southgate, MI

[Ed. - If I had any choice I'd stay away from both. I would think that the water vapor (the clouds are actually just plain water) from the dry ice would be like continuously subjecting your machine to a humidity test - with the usual results; rust & corrosion. I'm not familiar with Chemical Smoke, but before I'd believe the "no residue" claim, I'd check it out with some white paper and a microscope.]

Letter to Ensoniq:

Re: Response of the Mirage to System Exclusive while in OS ver. 3.1.

When used in conjunction with Dr. T's Keyboard Controlled Sequencer, it responds properly to all MIDI data except System Exclusive when booted from an OS 3.1 sound disk. Since System Exclusive commands work fine when booted from my MASOS 2.0 disk, I am assuming that it is the front panel key codes which have been changed (my Advanced Sampler's guide apparently gives the MIDI implementation for OS 1.1).

Below is an example of a Sys. Exclusive command (in decimal form), which I have successfully sent to the Mirage in OS 2.0, but which it seems to ignore when booted to an OS 3.1 disk.

Byte #

1st	240	System Exclusive
2	15	Ensoniq code
3	1	Mirage code
4	1	Mirage command code
5	12	PARAM key
6	2	"2" key
7	2	"
8	14	(up arrow) key
9	14	"
10th	127	End of command marker

Could you please send me the correct codes for OS ver. 3.1? I would like to be able to access some of the new parameters offered in 3.1 (local on/off etc. Any other MIDI/Mirage info would also be appreciated.

Thank you for your help in this professional dilemma,

Sincerely,

Brian Bell  
Tacoma, WA

[Ensoniq's response - the system exclusive codes are only available when you boot with a MASOS disk.]

Therefore, you need to boot with MASOS and then load in your sounds. These codes were available in older standard operating systems (1.1 for example) but were removed to make room for more MIDI features (including local on/off) and because the MASOS implementation is far more powerful.]

Dear TH,

How about a review and head on comparison between Digidesign's visual editing system and Sound Lab's 1.1 version? I've heard stories from different musical retail outlets that Turtle Beach's Vision isn't up to snuff compared to the two systems previously mentioned.

Maybe you should design some type of overall comparison rating system (like stars or other symbols) so that we readers would know in general what are the strong, as well as the weak points to each system. I know that this would be fairly hard to do since each program has different features, and ratings should warrant some type of control, (ie, a panel of four or five different people rating product performance) to maintain objectivity.

Since I am a musician (not a hacker) and own both the Mac Plus, as well as the Commodore 64, I would have to say that operating all of my musical software on the Mac is much easier. I don't have to remember all of those DOS operating commands, or what letter or number does what in each specific program. I don't mean to put down Commodore or IBM or any of those guys, but the Mac and similar computers just have all of their commands listed right there in front of you. They take all the guess work out of setting programs and sequences up, and when you're doing time in the studio or using your sequencer on the gig, this helps, a lot!

In rebuttal to Scott D. Willingham's comment, "I will not pay \$400 for a visual editing system!" my reply is that I will pay the \$400, provided that the program has THE RIGHT STUFF.

Excellent job guys. Keep on hacking.

Peter Buchta  
NY, NY

[Ed. - I think we could (and probably will) put together a "features chart" for the various waveform editors. This will be more of an objective, "can it do xxx?" type of chart. Because of the great differences in price and the computers that they run on, giving some kind of overall ratings to the different programs is really an "apples and oranges" situation. A really terrific piece of programming designed to run on a C-64 still might not look as impressive as a half-baked job on a Mac. And the programs might even cost the same. But - how do you factor in the cost of the computer?]

Dear Erick Hailstone,

I very much enjoy your coverage of Sampleware products and need to know their address. I own an ESQ-1 and wish to obtain their cartridge of programs.

Also, do you know of any other program cartridges for the ESQ-1 besides the Ensoniq E2 Prom. Please inform me ASAP. Thank you very much.

Sincerely,

Robert L. Richman  
Data Stream  
San Francisco, CA

[Ed. - Sampleware can be reached at PO Box 182, Demarest, NJ 07627. Ensoniq is selling "Prom Storage Cartridges" that will store up to 80 sounds. These will come with 40 sounds already in them (to keep or write over). But mostly Ensoniq would like to see this kind of activity taken over by others. There should be plenty of vendors appearing over the next few months.]

[Erick's response - (Glad you asked.) You'll probably notice an ad in this issue from Clark Salisbury and myself selling ESQ-1 sounds. There will surely be more people out there doing the same.]

Dear Jane:

In regards to Erick Hailstone's review of the Mirage Visual Editing System from Ensoniq, I would like to state that the version Erick reviewed was a pre-production release.

In the production version I corrected a few minor problems and also fixed the parameter change interface, so that changing parameters on the Commodore Keyboard is almost as fast as changing them on the Mirage Keypad. I would also like to emphasize that the current version of the C64 MVES supports only a Passport compatible MIDI interface. I am working on a software change that will support the Sequential Circuits C64 MIDI interface. And when finished, I will provide this information to the Transoniq Hacker for publishing and also mail copies to anyone who requests it. If anyone is stuck in the meantime, please give me a call at Ensoniq.

Sincerely,

Alan K. Smith  
Ensoniq Corp.

Dear Clark,

Your work on the ESQ-1 is welcome. I don't even know how to use it and it sounds amazing, it's a total bitch. I'd like to know if and when I can get Mirage programs installed in the ESQ-1. Also, I have an Amiga computer which has the same chip as a Macintosh but no software yet - except the Music Studio which is great! Would Sound Lab 1.1 be useable on the

# SYNTHASSIST

COMPLETE PARAMETER CONTROLS AND GRAPHICS

## SAMPLING

As you would expect, SYNTHASSIST provides a complete display of the pertinent Mirage sampling and configuration parameters. In addition the sampling time and tuning note help to make your original sample, the basis for all of your future efforts, as accurate as possible.

SAMPLE TONE	SAMPLE TIME	KBD HALF: LOWER
C0 NOTE	2.49 SECONDS	WAVESAMPLE: 2
		WAVE START: 34
		WAVE END: 75

SAMPLING PARAMETERS		CONFIGURATION PARAMETERS	
MULTISAMPLING	[OFF]	MASTER TUNE	[ 50]
LINE(ON) / MIKE(OFF)	[OFF]	PITCH BEND RANGE	[ 8]
EXTERNAL FILTER	[ 0]	KBD. VEL. SEMS.	[ 30]
SAMPLE TIME ADJUST	▷ [ 30]	KBD. BALANCE	[ 32]
INPUT FILTER FREQ.	[ 80]	H/L PROGRAM LINK	[OFF]
SAMPLING THRESHOLD	[ 24]	MIDI OMNI MODE	[ ON]
		MIDI CHANNEL	[ 1]
		MIDI THRU MODE	[OFF]
		MIDI CONTROLLER	[ ON]

⇒ PRESS THE SPACEBAR TO BEGIN SAMPLING ⇐

WAVESAMPLES    PROGRAMS    SAMPLE    GRAPH    TOOLS    FILES    QUIT

(Part of a series depicting the power and simplicity of each component of SYNTHASSIST, but why wait?!) **SEND FOR A FREE BROCHURE! or a \$12 DEMO DISKETTE or \$299 COMPLETE!**

Northeast Visions, 68 Manor Drive, Glenmont, NY 12077 (518) 439-0967

Amiga? Anyway, I love your column and look forward to the Hacker twice as much.

Regards

Monte Meldman, MD  
Northbrook, IL

[Clark's response - Unfortunately, it's not possible to install Mirage wavetables in the ESQ-1. The wavesamples in memory in the ESQ-1 aren't intended to be user definable (or even user accessible) as they are in the Mirage. The ESQ-1 is a digital synthesizer, the Mirage a digital sampler - the hardware and software simply are not compatible. The same sort of problem will also keep you from being able to run Sound Lab on the Amiga. Even though there are some hardware similarities between it and the Macintosh, there are enough differences between the two computers (and their operating systems) to not allow you to swap programs back and forth in this manner. Don't despair, though. If future sales of the Amiga are strong enough, (and Commodore seems quite optimistic), I'm sure some enterprising software developer will design a visual editing system for it.]

Dear Hacker,

Every so often, (never often enough) someone gives something to the Music Industry, instead of merely taking from it. In terms of support to the musicians in the field, (the people really making music) the

Transoniq Hacker should be given the utmost credit. The information in your articles, reviews, classifieds and advertisements are a valuable resource for your readers. The fact that you have seen the need for instrument user support and have taken the steps to offer it, shows your genuine interest, concern and superior insight into the world of music.

Most sincerely,

G. Bob Connelly  
K-Muse, Inc.  
Chatsworth, CA

[Ed. - \*blush\*]

Dear Hacker,

Here is a question: Did anyone out there find an upgraded keyboard replacement for the original Mirage? If so where can I get it? The keyboard is just Barely Bareable.

I will either upgrade or trade in. Also, are they discounting it? I have heard of prices under \$1500.00. Also, who has a real superior piano sound?

[Name lost.]

[Ed. - We haven't heard of any way to change the keyboard. You might be able to work a trade via our

classifieds (some drummer types and others are said to sometimes prefer the older version). We don't know of any dealers discounting the older version, but it might make sense if everyone's out there raving about the newer one - check the mail order houses.]

Hacker:

One thing that I am hoping to learn about is updated improvements on the older synths. I'm locked into a rural setting far away from the cities and so I can't keep up with the "techno-talk." I bought an older Mirage and I have heard rumors that the output has been improved and that the power supply has been quieted down. Is this so, and how can I improve this?

I would like to learn this kind of stuff and sampling know-how and disk info from your newsletter.

[Name lost.]

[Ensoniq's response: All updates are performed by authorized Ensoniq repair stations. The Hacker publishes this list from time to time. You can also obtain the list by writing to Ensoniq Customer Service. In addition, check with your dealer, as they may be an authorized repair station that chose not to be on the list.]

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Dear Hacker,

I am tremendously grateful for your publication, and the few times I have called people for help in your Mirage-Net they have been quite friendly, patient and generous.

I have owned a Mirage for over a year and am in awe of its power and potential - there are however two problems with the system that are, for me, really major. One is that when using a Yamaha QX-7 Sequencer there are random, intermittent drop outs of notes or bars. You certainly couldn't use the Mirage/QX-7 combination in a performance situation. I even tried a different QX-7 and put it and the Mirage on separate house electrical circuits but still have the same problem. The other problem is much more frustrating and produces a disappointing musical result for me in much of what I do with the Mirage. I work in a sound-lab situation with sequencers and a 4-track tape machine. In sequences that I create on the QX-7, or on any other sequencers where the sequence has been quantized and it orders more than four simultaneous notes, the timing or beat of the sequence is a little irregular (the Mirage stumbles at these points) and the end product is really not very pleasing. I've brought my equipment to my dealer and we've had the same thing happen with other sequencers and other Mirages (older and newer ones with earlier and later operating systems). I am not a performer/musician and can see how this system flaw wouldn't much affect their success with the Mirage but it seems to me that this problem would cause some real disappointment in a University sound lab situation where there is heavy use of sequencers and computer sequencing.

I and my dealer have been in touch with Ensoniq on these two problems for months but haven't received any satisfaction or solutions.

Ensoniq - would you please try to solve these problems? Can anyone else out there offer any insights? Is the irregular timing problem caused by the processor not being fast enough or the system not having enough memory? - Help!

Bob Natalini  
Middleburg, NY

[Ensoniq's response: We use many Mirages with external sequencers for our trade show demonstrations and haven't experienced any note drop outs on OS 3.0 or higher. We have never had a QX-7 in house, so we can't answer you on that one. You could also try using a MIDI Data Filter which prevents the Mirage from receiving any MIDI info not intended for it. Clogging of the MIDI data path and unnecessary MIDI messages cause delays in most MIDI systems as the receiver spends all of its time interpreting useless data and throwing it away. Aftertouch and controller data are notorious for this.]

Dear TH,

I work as a composer and musician here in Regina, and have found the Mirage to be irreplaceable in my

# Transoniq Hacker

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projects. Sometimes I get the feeling that Mirage owners are a little apologetic about owing what, after all, is only the little brother of the state-of-the-art monsters seen in the credits of most records you buy today. Well, hold your heads up high, I say! Especially with the updated electronics now in place, and with the ever-expanding software library available to us, we Mirage owners can be proud to own one of the most exciting keyboards on the market today.

Here are some of the projects I have used my Mirage on in the last year:

-a series of segments for the Canadianized version of Sesame Street. My favorite of them features themes played on sampled goose honks and pig snorts. (In Canada - and in many other countries - Sesame Street is repackaged to reflect our own culture. Spanish or specifically American segments are replaced with lessons in French, or items on our own heritage)

-four different soundtracks for various locations at Expo 86, the World's Fair in Vancouver. One project in particular, the "Million Dollar Gold Coin" display, relies very heavily on the Mirage, in a soundscape designed to make you think of "long dead civilizations and ancient glories."

-I am also musical director of a national CBC-TV series called "Country West." Here too, we are constantly finding uses for the Mirage, especially when called upon to recreate the parts from a guest artist's recorded work.

-In dramatic soundtracks for television and theatre, where a more classical style might be called for, the Mirage also shines. I have found it to be particularly effective on projects where the client could afford to bring in some live instrumentalists, but not a full symphony orchestra. The one argument I will still readily agree with is that a sampled instrument sound will not recreate the depth of expression or subtlety mixed with all the wonderful, human randomness of some live featured instrumentalists, many of the Mirage's instrumental sounds will pass totally undetected as anything other than the real thing. Budget-wise, of course, this always makes good sense.

As an artist, the Mirage has expanded my ability to express myself in countless ways, and at a fraction of the price of the other samplers. Even now, as other manufacturers attempt to break into the low-cost sampling keyboard market, it is going to be a long while before someone else can offer the huge base of software and computer support the Mirage has established by being the only product of its type on the market for the past year. Bravo, Ensoniq!

Rob Bryanton

P.S. -Has anybody heard of any software packages yet to unite the Mirage with the Amiga? I have spoken to the Mimetics company about this, who at that point replied only that I was not the first person to ask them that question, but that they had nothing in the works yet. Any other Mirage-Amiga owners out there? Let me hear from you.