

TRANSONIQ HACKER

The Independent News Magazine for Ensoniq Users

Stereo and the ESQ'1/SQ-80

By Clark Salisbury

Stereo. Yeah. It's like 3-D for the ears, auditory technicolor. Some of the most dramatic effects available to the proud SQ-80 or ESQ'1 owner spring from the stereo capabilities of these venerable keyboards. The positioning of a sound in the stereo field is known as "stereo placement." The programming controls of the ESQ'1/SQ-80 allow us to position a sound within the stereo field. But we can do more with the ESQ'1/SQ-80 than simply position sounds at some arbitrary point within this field. We can also control a sound's apparent movement within the stereo field, creating some rather striking effects. The ESQ'1/SQ-80 can supply a multitude of stereo effects. Fortunately, they can all be categorized into three basic types of effects:

- 1) Static stereo effects,
- 2) Dynamic stereo effects, and
- 3) Real time stereo effects.

1. Static stereo effects

The static stereo effects are at the most basic level of the ESQ'1/SQ-80's stereo capabilities. Primarily, they involve simply positioning your sound somewhere within the ESQ'1/SQ-80's stereo field. To see how this works, select a sound on your ESQ'1/SQ-80 (preferably one that sustains, such as the "SLOSTR" patch, or any ensemble string-type patch you might have), and press the [DCA4] programming button. This will take us directly to the DCA 4 programming page. DCA 4 is in charge of final volume and panning, and its display is quite straightforward. There are only four active controls, three of which we are interested in here - one for panning ("PAN") and one each for panning modulation source and amount. The last parameter, envelope 4 modulation amount, controls overall program volume. ENV 4 itself is preset as the DCA 4 modulation input - it can't be changed.

In this first example we won't be modulating the panning control, so select "MOD=", and use the data slider and UP/DOWN arrow buttons to set it to "OFF" (tip: as with all the modulation input controls, you can easily select "OFF" by simply moving the data slider to its uppermost position. If it's already at the top of its travel, move it down and then back up). Now select "PAN=". This is the manual panning control, and it is used simply to position the sound within the stereo field. Its range of values is from 0 to 15, with a value of 0 sending your sound to the ESQ'1/SQ-80's left output only, a setting of 15 sending the sound to the right output only, and values of 7-8 sending the sound pretty much equally to both outputs. To hear the effect of panning, vary this control while playing the keyboard (remember that any changes you make to a parameter on the ESQ'1/SQ-80 won't be heard while you are holding down any keys on the keyboard - you'll hear the changes only after you release the key(s) and play new ones).

There are a couple of interesting applications for static stereo effects. A primary use is for separation of two voices. For example, let's say you're playing a split keyboard sound with electric bass as the lower sound and piano as the upper. But what happens if you want to add some sort of signal processing, say chorusing or reverb, to just the piano sound? You can do this by panning the piano program to the ESQ'1/SQ-80's right output and panning the bass sound to the ESQ'1/SQ-80's left output. Now you can treat the ESQ'1/SQ-80's outputs as two separate monophonic outputs, rather than

In This Issue...

MIRAGE:

Review: WAVEFORM From Dr. T <i>James Willing</i>	10
Review: The Iguana <i>Kenn Lowy</i>	13
Deciphering Mirage Sequences <i>Nathan Miles</i>	17
Rhythm Tracking With The Mirage <i>Dave Caruso</i>	19
Livewire Sample Review <i>Dave Caruso</i>	22

ESQ-1/SQ-80:

Stereo and the ESQ-1/SQ-80 <i>Clark Salisbury</i>	Cover
Technosis Patch Review <i>Chris Barth</i>	6
The ESQ-1 Made Easy (Video) <i>Jim Grimes</i>	15
Imitating Digital Synthesizers <i>C.R. Fischer</i>	20
Hackerpatch <i>Hailstone, Mims, Contributors</i>	24

EPS: Pending

GENERAL:

Random Notes.....	4
Hypersoniq.....	4
A Reviewer Review <i>Alan Goldberg</i>	8
Classifieds.....	26
The Interface.....	27

a single stereo pair. Process one output and not the other, n'est-ce pas?

One of my favorite uses of the stereo outs is to create a larger-than-life sound by assigning two slightly different variations of the same sound to the two outputs. We'll need to use an extra patch location for this, so if you can't afford to lose anything in your ESQ-1/SQ-80's internal memory, now's the time to store those sounds.

Here's how it works.

Let's stick with the "SLOSTR" program (or whatever string-type sound you've been using) for this example.

The first thing we need to do is to create a slight variation of the "SLOSTR" sound. This variation could include changes to the filter settings, changes to the octave, detuning, changes to the envelopes, etc. Let's make a couple of changes - one to the filter and one to the octave.

Select [FILTER] from the programming buttons. Now select "FREQ=" on the filter page, and increase its value by about 7 points or so. You should notice the sound getting somewhat brighter. Now select [OSC 1] from the programming buttons, and raise its pitch one octave. Repeat this procedure for the other two oscillators. Now the sound that you have should be one octave higher in pitch and somewhat brighter than the original "SLOSTR" (or whatever) sound.

Now for the stereo imaging. Press the [DCA 4] programming button. Make sure that "MOD=" is showing a setting of "OFF". Now select "PAN=" and set its value to "15" - hard right in the stereo field. We're done with this sound for now, but we'll need it in a moment, so let's store it to memory - press the [WRITE] button, rename the sound (maybe something like "SLYSTR" - hey, it's easy...) and store it to any memory location except the original "SLOSTR" location.

Return now to the original "SLOSTR" program. Select [DCA 4] from the programming buttons. Once again, make sure that the setting for "MOD=" is set to "OFF". Pan "SLOSTR" hard left by selecting "PAN=" and using the data slider and UP/DOWN arrow buttons to set its value to "00". For the final touch, we head over to the SPLIT/LAYER page, with the intent to layer "SLOSTR" and "SLYSTR". From the SPLIT/LAYER page, select "LAYER=" and set it to "ON". Now select the LAYER program and set it to the program we just created and saved a moment ago as "SLYSTR". Go ahead and try the patch now - pretty thick, eh? Press the [COMPARE] button to hear the sound we started with, press it again to hear the new sound. What a difference a little stereo makes (not to mention the fact that the ESQ-1/SQ-80 is now playing six oscillators on each note, as it's in the layered mode). If you'd like, you can save this setup back to the original "SLOSTR" memory location.

2. Dynamic stereo effects

So far we've been using the stereo capabilities of the ESQ-1/SQ-80 to place a sound somewhere in the stereo field and leave it there. But the ESQ-1/SQ-80 also allows us to move sounds around dynamically within the stereo field, with some fairly spectacular results.

Any of the ESQ-1/SQ-80 modulators can be used to control stereo movement - LFO's, envelopes, velocity - there are 15 sources of modulation in all.

Let's explore a couple of possibilities. For these examples, let's use "ORGANL", or some other combo-organ type of

program. We'll be going for straight-ahead LFO modulation of panning.

Select [DCA4], and from the DCA4 page, set the value for "PAN=" to "08".

Now we want to connect an LFO (let's use LFO 3) to DCA 4. This is accomplished by selecting "MOD=" on the DCA 4 page, and setting it to read "LFO 3". We will also need to program a modulation amount. Let's set it to maximum (the display should read "MOD=LFO3*+63") to get the greatest possible effect.

Our next logical step is to head over to the LFO 3 page to set the LFO up to do something interesting. But first we should make sure that LFO 3 isn't being used somewhere else in this particular program. We can do this fairly quickly by selecting each of the programming pages that have modulation inputs - OSC 1, 2, and 3, DCA 1, 2, and 3, and the filter - and visually checking them to see that LFO 3 isn't assigned anywhere. If you should find that it's assigned to something (an oscillator, for example), simply turn it off by selecting it and moving the data slider all the way up.

Now that we're sure we can make changes to LFO 3 without screwing something up somewhere else, let's head over to the LFO 3 page. From here, let's try setting "FREQ=" to "18" and "WAV=" to "TRI". Now, let's set both level 1 and level 2 to 63, the maximum value. With both L1 and L2 set to the same value, the "DELAY=" setting will have no effect, so we can ignore that. And with L1 and L2 both set to their maximum, the "MOD=" input can have no effect, so we won't worry about that, either. Also, for this experiment, the effect of the "RESET=" and "HUMAN=" are subtle enough that we may as well ignore them, too.

Now if you care to listen to a few notes on the ESQ-1/SQ-80, you should hear a pronounced movement of the sound, panning left to right and back again. You can vary the rate of panning by varying the "FREQ=" setting of LFO 3. It is interesting to note that the effect becomes more dramatic at higher frequency settings. Also, you can delay the onset of the panning effect by setting the value for L1 to "00", and adjusting the value for "DELAY=" appropriately.

Lower values for "DELAY=" will create longer delays, and a slower buildup of the panning effect. Other interesting effects can be had by selecting different waveforms for LFO 3 - the "SQR" wave can produce particularly striking results.

Another controller that can be effective as a panning controller is the keyboard. The idea is that you can have the sound move from left to right (or right to left) in the stereo field as you play up (or down) the keyboard. This technique is used by Ensoniq on their acoustic piano programs, as well as a number of other sounds. It's an easy technique to use - simply assign "PAN=" to a value of about 07 or 08 on the DCA 4 page (to place the sound more or less in the center of the stereo field), then for "MOD=" assign "KEYBD 2", and set its value to +63. Viola! Panning controlled by keyboard position.

A rather less-used (but possibly more interesting) candidate for a panning control is the envelope. One of the things I like about envelope controlled panning is that it allows you to correspond the panning with some aspect of dynamic movement within the sound. Let's try this out with an ensemble brass type of sound (perhaps "ANABRS" for you ESQ owners, "ZBRASS" for you SQ-80 folks) - the characteristic filter envelope usually associated with brass programs is what we're after. So select the program that you want to work with, and check out which envelope is being used to control the filter. Press the [FILTER] programming

button, and take a look at the modulation inputs at the bottom of the filter programming page. One of them should be set for one of the envelopes - make a mental note of which envelope it is.

Now head on over to the DCA 4 page. Set "PAN=" to "08". Now set "MOD=" to whatever envelope you noted from the filter page, and set amount to "+63".

Check out the sound. Notice how it quickly pans from one side to the other?

Now select [ENV n] (whatever envelope you're using for this exercise). If you set its attack time fairly long (say, something like 30), not only will you increase the filter attack time, you'll also increase the time it takes for the sound to pan from one side to the other.

You may want to experiment a bit with envelope-controlled panning, but without affecting other parts of the sound you're working with. Easy enough. Find a sound that seems a good candidate for envelope-controlled panning. You can find out which envelopes, if any, aren't being used somewhere else in the particular program by selecting each of the programming pages that have modulation inputs - OSC 1, 2, and 3, DCA 1, 2, and 3, and the filter - and visually checking them to see which envelopes are assigned to do something.

Once you have located a free envelope, assign it to the "MOD=" input for DCA 4, and experiment to your heart's content. There is one effect I've found particularly interesting, though. Try layering two similar sounds, as we did in one of our earlier examples. Assign a positive-going envelope to control panning for one sound, and a similar envelope, but with a negative modulation amount, to the other sound in the layer. In other words, to "MOD=" assign "ENV n" with a value of +63 for one sound, and "ENV n" with a value of -63 for the other sound. The effect will be that the two sounds will cross each other going in opposite directions when they are played.

Many other interesting experiments involving envelope-controlled panning are possible. Remember that envelope level can be controlled by velocity (the "LV" parameter) as well as attack time ("T1V"), and T2 and T3 can be affected by keyboard position ("TK").

3. Real-time stereo effects

There are a couple of other modulators that can be used with panning, and I've left them for this section because there is an important difference between these modulators and the ones we've encountered so far. The difference is that these modulators all offer some form of real-time control. In other words, whereas the modulators that we've dealt with so far all can be used to preset some type of stereo placement or movement, the modulators we come to now are primarily meant to give you a way to control stereo panning of the ESQ'1/SQ-80 while you are playing.

Probably one of the most obvious choices for real-time control of panning is the mod wheel. It's easy enough to assign the wheel to "MOD=" on the DCA 4 page, to give it a value of + or -63, and to set the "PAN=" parameter so that the sound starts either to the left or to the right, depending on your inclination. We can also use the technique used twice in this article already - that of assigning two variations of the same sound to opposite audio outputs, and assigning the wheel to pan the two sounds in opposite directions. Still another application is to use the wheel to do more than one thing at a time.

One of my favorite programs is a combo organ sound that

uses the wheel for both panning and for adding a Leslie effect at the same time. This is achieved by assigning the wheel to both DCA 4 and one of the LFO's, which is, in turn, routed to one of the oscillators' modulation inputs.

Other sources for real-time control of panning include the optional Ensoniq CVP-1 footpedal, the assignable external controller ("XCTRL"), velocity and aftertouch. These should all seem pretty straightforward at this point, with the possible exception of the external controller. Without going into a lot of detail, "XCTRL" allows you to assign things like pedals and breath controllers as modulation sources when you are using another MIDI keyboard as a controller for the ESQ'1/SQ-80.

If you don't have a CVP-1 or an external MIDI controller, you can at least experiment with velocity-controlled panning, and you SQ-80 owners can also play around with aftertouch-controlled panning. These are pretty straightforward - simply assign velocity or aftertouch as the panning modulation input on the DCA4 page, set the amount to an appropriately high level, and experiment with the "PAN=" control to discover optimum settings. What might prove a bit more interesting is to control an LFO from velocity (or aftertouch, for you SQ-80 owners), and then use that LFO to control panning. If you want to try this out, go back to the example of LFO controlled panning, and set everything up the same way we did there. The only difference will be that for the LFO, you'll want to set L1 and L2 to "00", and you'll want to set "MOD=" to "VEL" or "VEL X" (or "PRESS", in the case of the SQ-80). Now the effect will be that there will be little or no LFO-controlled panning unless you play the keyboard hard, (or use aftertouch). Try it! It's a pretty interesting effect.

And one final thought on using velocity and aftertouch. Do you have any patches that change radically when you play them harder? These kinds of sounds might be good candidates for velocity or aftertouch control of panning. If you'd like to test your programming skill a bit, try to come up with a sound that changes in these ways when played at higher velocities:

- 1) Pans to the opposite output,
- 2) Goes from dark to bright,
- 3) Changes pitch precisely one octave, and
- 4) Adds vibrato.

If you're nice, maybe next month we'll print the patch chart for one such sound. So 'til then, "Get out in that kitchen, rattle them pots and stereo pans..."

Bio: Clark Salisbury is a partner in the MIDI Connection, a Portland-based consulting firm. He has been actively involved in the composition, performance, and recording of electronic music for over 7 years and is now producing his own pop-oriented compositions. According to EM Magazine his favorite color is chrome. ■■■

RND (♪♪♪)

Latest word on the shipping date for the EPS is now "late January to dealers, larger quantities in February." There should be demos going on at NAMM (even as I write this - *some* people can't go - they have newsletters to get out), so we should slowly start to get more info on this beast.

* * *

The Mirage/ESQ-1 BBS running out of Beaverton has been sold off and is no longer in operation.

* * *

Rumor has it the the famous Salisbury/Hailstone team is working on a how-to book for the SQ-80.

* * *

Special thanks to the folks at Ensoniq for taking the time to go through our questions and answers right in the middle of the annual "preparing-for NAMM" panic. (And for putting up with our constant dunning: "Where's the EPS? Where's the EPS?...")

* * *

Version 3.3 of the ESQ-1 operating system should be released in the very near future. It'll have some "SQ-80 features" included. Contact your dealer. Also, production has been halted on the ESQ rack (ESQ-M).

* * *

Well, naturally, we haven't seen yet how this issue is going to turn out (printing wise). It should be slick with some color highlights - hope you like it!

* * *

TRANSONIQ-NET HELP WITH QUESTIONS

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

ESQ-1 QUESTIONS - Jim Johnson, (602) 821-9266. 5 to 10 p.m. Mountain Time (AZ).

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

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

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

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

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

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

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

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

CHANGE OF ADDRESS

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

BACK ISSUES

Back issues are \$2. each. (Overseas: \$3 each.) Issues 1-9, 11, 13-18, 21, and 22 are no longer available. Subscriptions will be extended an equal number of issues for any issues ordered that are not available at the time we receive your order. ESQ-1 coverage started with Issue Number 13. SQ-80 coverage started with Number 29, (although most ESQ-1 coverage also applies to the SQ-80). EPS coverage started with Number 30. Permission has been given to photocopy issues that we no longer have available - check the classifieds for people offering them. Reprints in our "Quick and Dirty Reprint Series" are available: MIRAGE OPERATIONS, for \$5, and MIRAGE SAMPLE REVIEWS for \$4. Each contains material from the first 17 issues.

HYPERSONIQ NEW PRODUCT RELEASES

Sound Systems of England announces *STILETTO* - two new sets of sounds (160 sounds each) for the ESQ-1. The sounds are available on data cassettes, Hybrid Arts' Genpatch ST Disk, or their unique "RAM-filler" service. (Send them your blank RAM cartridge and they fill it with sounds at a reasonable cost.) *STILETTO* sounds are created by working programmer/musicians and are designed for home and pro studios and gigging musicians. Mirage sounds are also planned. For complete information and prices, write or call: Sound Systems, 14 Nelson St., Dumfries, DG2 9AY, UK, Ph.: 0387-65276.

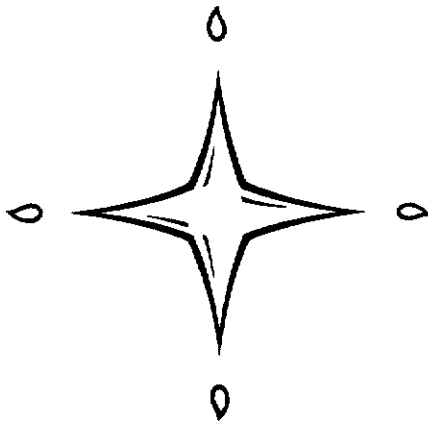
Softwear Designs announces *MIDIwear T-shirts*. Six different silk-screened designs featuring various high-tech music graphics are available in red, blue and black. \$14 each (+ \$3 shipping). **SOFTWEAR DESIGNS**, PO Box 668, Welches, OR 97067. (503) 622-3184.

A new set of 40 sound programs for the the ESQ-1, ESQ-M, and the SQ-80 has been released by **Syntaur Productions**. The sounds were programmed by Sam Mims, keyboardist for the band "Messenger" and writer for the Hacker. A 22-page booklet accompanies the data (Mirage disk or cassette tape) and includes extensive program notes explaining how each sound was created. *SOUNDSET 1* is \$17.95 postpaid from Syntaur Productions, 11116 Aqua Vista, #2, North Hollywood, CA 91602. (818) 769-4395.

Leaping Lizards is at it again with a bevy of new products. *THE IGUANA JUNIOR* (\$24.95) is a companion program for *THE IGUANA* and gives performing musicians the ability to play Mirage sounds and transmit MIDI SysEX data to other instruments - all from within the normal operating system of the Mirage. *IGUANA JUNIOR* also incorporates the enhanced operating system 3.d and includes three new lower and upper banks of sounds. *THE CHAMELEON* (\$39.95) is a new multi-utility disk featuring 15 different utility programs for the Mirage - copying, fast formatting, disk error finding and recovering, hardware diagnostics, and more. Leaping Lizards has also updated their E.2 sound protection operating system to include the 3.d features and has started a coloring contest(?) to celebrate Leap Year. **PRIZES, PRIZES, PRIZES!** For complete info on all this stuff: Leaping Lizards, 10026 36th Ave. NE, Seattle, WA 98125. (206) 527-3431.

Perfect Fretworks has developed *THE TRIPP STRIP* (tm), a 30-in long, 3/4-in wide, hard-coated touch surface that mounts just behind the keys on your keyboard. *THE TRIPP STRIP* can be programmed to give a variety of MIDI messages at different points along its length. \$299.00. Perfect Fretworks, PO Box 731, Rockport, MA 01966. (617) 546-6232.

Blank Software, creator of Sound Lab, announces *ALCHEMY*, the first universal stereo sample editing network for the Apple Macintosh and supported sampling machines. The new editor and networking program supports the new EPS, the Mirage, the Akai S-900, E-mu Emax and SP-1200, and the IMS Dyaxis sample-to-disk system. Retail price: \$495. Info: Blank Software, PO Box 6561, San Francisco, CA 94101. (415) 863-9224.



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SW Worcester, NY

"I was very impressed with the various sounds you developed."

LL Des Plaines, IL

"The sounds are really great. I especially like the transparency of the keyboard sounds."

MS East Providence, RI

"Yes! Yes! Your sounds are the best on the market and I want em all."

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"I have bought ESQ-1 sounds from you twice before and I want to thank you for your latest sound list."

BR Los Angeles, CA

"Please send all six volumes of additional ESQ-1 sounds."

GS Garden Grove, CA

"I am very pleased with your sounds. They're terrific!...your competitor's sounds are not your quality at all."

RZ Philadelphia, PA

"I love the sounds. The company I do most of my work for also likes them a lot."

SW Worcester, NY

"I now have over 300 of your sounds, and they're great."

TG Lee, MA

"I have found your patches to be musically useful, with very few sounding the same. The ones that are similar have subtle but important differences, not just a tweak here and there. Some of the patches are nothing short of stunning and are worth the price alone."

MZ Santa Cruz, CA

"I'm very pleased with the volumes I've ordered from you and I'd like to order more."

HD Houston, TX

"I have just received your cartridge 'D' voices, strings, etc. and I find it to be most satisfactory."

SP Syracuse, NY

"Nice sounds - send more!"

TD Hartford, CT

"I love your sounds."

JL Springfield, MO

"Thanks again for the great programming."

SW Worcester, NY

"I've heard your ESQ-1 voices and am impressed. I hope your TX81Z programs are as well."

TGW, Islip, NY

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"I've enjoyed the sounds I ordered previously, 1-8, and have found them to have a wide range of applications. I compose music in the "new age" category, and have used many of the gem named sounds. Also your keyboard sounds (piano, organ) are very nice for middle of the road rock that I play. ... Thanks again for your good work, and keep those sounds coming."

KM Aptos, CA

"...while I think of it, let me mention that if jazz is your thing, Nick Longo of Cesium Sound has a patch, VIBES2 that is just as phenomenal in recreating a real world sound."

Review of Voice Crystal 2, TRANSONIQ HACKER

"CHILE" [in Volume 11] served as an inspiration for a new Latin riff the moment we started playing it."

my sound, incorrectly attributed to Q-Spectrum,
KEYBOARD

"Longo's strong suit seems to be the atmospheric voices--[Vol. 9, 10]--of which I liked every one I heard, especially the one named GOLD. Many of the other quality sounds would be of great use to the Techno-pop synthesist--check out [Vols. 5 and 6] with titles such as OSMIUM and NOID4.

Review, TRANSONIQ HACKER

"As an ESQ-1 customer, I've been delighted with your sounds. I just got a Roland D-50 and when I saw your ad, well... Here's \$50.00 for a ROM card..."

DH, Plantation, FL

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THE PATCH BAY

Patch Reviews By Chris Barth

TECHNOSIS (Formerly Psyche Shriek)

FOR: ESQ, SQ-80.
PRODUCT: Synth patches.
PRICE: 80-Voice cassette: \$30, Mirage disk: \$35, EPROM: \$65, Demo tape: \$3.
FROM: Technosis (Formerly Psyche Shriek), 3960 Laurel Canyon Blvd, #353, Studio City, CA 91604. Demo Line: (213) 656-3515.

This month we're auditioning 80 sounds offered by Mike Peake under the Technosis name (just as I was getting used to Psyche Shriek). Mike is the son of Don Peake, who was responsible for the music for the drive-in classic "The Hills Have Eyes," and is currently involved with incidental music production for the incidental NBC television show "My Two Dads."

There are ten pages of edits and how-to information included with these voices. This is the most professional package I've seen yet and it should set a standard for all other patch programmers. Splits and layers are spelled out for reference if you accidentally lose them; the edit suggestions are insightful and are especially useful to novice programmers who might need a little guidance. Mike actually explains a lot of stuff regarding programming the ESQ-1 and this knowledge is helpful across the board.

I particularly liked some of his general hints and tips. For example, have you ever tried assigning random sounds to a sequence, keeping the sounds that fit, and then finding new sounds to fit the remaining parts? You can find new uses for old, "useless" sounds this way. This can be as easy as loading a whole new bank of patches in your existing sequences and pressing "play" after loading them.

Another disciplined approach is to write a complete sequence, song or melody using only the ten sounds that are in front of you in the display.

One trick which was new to me: (1) copy an existing track on the sequencer to another empty track, (2) set the sequence so it loops, (3) move to the Mix/Midi program number page, (4) use the up/down increment keys to step through every available sound for the copy track. Like Mike promised, I found some great layers and unison lines using this technique. Of course, you might want to save some of the better layers as new patches.

The voices are very impressive, but they are specialty items. They are all quite different, compared both among themselves and against the competition. As the promotional material indicates, they are mostly suitable for Electronic/Techno/Funk and Rock/New Age applications. Mike's taste in sounds clearly runs toward the first category, in particular, artists such as Art of Noise, Cluster, Japan, Kraftwerk, the Residents, Ultravox, etc. If you're into this non-commercial stuff, or just stuff your parents will hate, this set of patches is definitely for you. Punk and thrash bands would be right at home with these sounds. If you do weddings, I'm not sure there's much here for you, unless you're looking to stretch yourself (and the bride's father might end up stretching you).

PSYCHE is my favorite. Remember those Giorgio Moroder continuous sequencer-like bass lines which drove all those disco records a few years ago? This is it! You get two notes

(the one you play and one automatic repeat) for each keystroke, and you can set the timing of the repeat. By tapping the keys, you can play very fast sequencer-like bass lines in real time. The mod wheel even adds a sync sweep. Use one finger from each hand and play like a drummer (but don't use drumsticks!). I can't imagine owning a synth and not having a patch like this; of course, all you Casio owners have had this effect for years.

Likewise, BRZRKR imitates the classic sample and hold effect - each single note repeats and repeats, at breakneck speed for up to 53 seconds! These are some of the best delay effect patches I've heard on the ESQ, and the accompanying instructions give lots of great tips on their use.

There are two types of percussion sounds included. The usual drum sounds are present, some with user-adjustable pseudo-reverb (it's pseudo-effective - buy a Microverb instead). The hi-hat is very well done. It's set up so you can simulate open and closed hits without using any controllers or the mod wheel, and the instructions for use are thorough. The other percussion patches make great use of noise waveforms; it's here where Mike really shines. There's no law that says you have to drive a tune using a snare, kick drum and hi-hat; Mike offers some new and different approaches to percussion sounds. If you like drummers who show up with garbage cans, hubcaps and chipped cymbals, look no further.

If you've got a drum machine, try layering these percussion patches with your machine's kick or snare. This is an easy way to jazz up an old drum machine sound. Actually, depending on your drum machine's MIDI capability, it should be possible to set the drum machine and the synth up so each drum machine hit would also trigger the ESQ drum patch, and vice versa. Hey, Larry Church, I bet you and Monster Dan know something about this!

The bass patches are all very well done and are new to my ears. I particularly like SC1440, which copies the Studio 440 bass sound - very fat indeed.

There's a lot here even if you don't care for exotic percussion sounds. The fat analog patches are fresh and very authoritative. I'm not a big fan of vocal patches, but COREUS (layered with AHFH \$) is the thickest, smoothest chorus I've come across. The layered superstar is OCTAVE, which consists of six square waves, each an octave apart. This is a very thick, heavy keyboard sound reminiscent of a mutant harpsichord strung with inch-thick bass strings. Mike includes edit instructions to get a big bass, and with the edits, this is a really big bass.

The new age style patches are very pretty; you might want to check out NICER which is typical of the bunch and appeared in Hackerpatch a few issues back. They are bright without being piercing or brittle.

There are a lot of lead voices which are distinguished mostly by their harsh or nasty attacks. Mike uses noise waveforms the way others use sawtooth waveforms, and frankly, it's refreshing to hear something different for a change (unless, of course, someone's doing it during your wedding reception). If the noise is too much for your tastes, you can usually adjust the grunge by changing the DCA for the offending oscillator. Mike's notes are really helpful in this regard.

There are a few special effects, mostly explosions, submerged sounds, and THE FLY. As special effects go, they're well done, although their usefulness is limited.

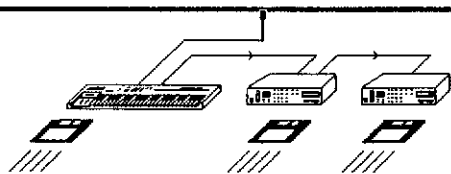
I guess what I like so much about this set is that (1) it doesn't sound like everything else, (2) there are really no apparent throwaways in the whole set (with the possible exception of REEDIN, the cheesy sax substitute), (3) what's supposed to be fat is fat, what's supposed to be nasty is nasty, and what's supposed to be nice is nice, and (4) the liner notes are an educational bonanza which increase the overall value immensely. If you've got enough white bread brass and strings and pianos already, maybe it's time to live dangerously and eat these unwashed apples. The Mohawk and safety pins can come later.

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

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THE EMPIRE STRIKES BACK

A Reviewer Review

By Alan Goldberg

If you are like me, you probably read one or more music related magazines every month. I think that I receive at least seven (some I never asked for). These magazines (including the Hacker) provide a valuable service to the Great Music Horde by giving us a large amount of information. Articles, interviews, very glossy advertisements, what's new, and reviews.

Look into the heart of Democracy and you will find an opinion, a commentary, a Review that stirs debate, discussion and even enlightenment. There is nothing healthier or more vibrant. But we, as consumers, must always be on our guard, consider the source, weigh the facts against our own experiences, and make our own best judgment to match our goals and needs.

I used to review rock concerts and new record albums. That was the Modern Music World during my early days. With the advent of MIDI, musical use of computers, and the 'Synth of the Week' club, face it - we have been SNOWED UNDER with product, and so, product reviews. Well, I have been reading the ESQ-1 patch reviews in the Hacker with great interest (naturally) for several months. These were authored by Larry Church, Chris Barth, Larry Krall, Don Slepian, and Rick Hall. Let me take a few moments to highlight these reviewers' styles with emphasis on the three main components of a review: facts, observations, and opinions.

One note: I have had lively discussions with other developers and the Hacker folk on the subjectivity of sound reviews. For example, the validity of describing a sound as fat, thin, rich, lush, bright, wimpy, or whatever. Most of the Hacker reviewers have gone out of their way to make some mention of the problem of describing a sound with words. This shows a great awareness on their part.

Larry Church's review (May issue) mentions that a review should be a general overview. He uses the words interesting, average, good, clever, and outstanding. He mentions some specific sounds, describes how they are loaded, and the price in eight paragraphs. This is an example of a good basic review that is clear, informative, but not very "juicy." Lesson 1: Good, factual and informative reviews can be boring reading.

The June review by Chris Barth demonstrates the educational approach to reviewing. Out of 13 paragraphs, four are used to educate us on ESQ-1 use rather than describe the product. The stand-out comment here is "synthesizer programming is more art than science", and he refrains from making personal value judgements about the sounds. Instructional reviews tend to cheat the product by taking up word space on sideline, although interesting, topics.

The review by Larry Krall (June) illustrates a common review technique called "waffling" or "fence sitting." Balance is the operative force in play here and the reader comes away with no strong opinion either way. Some aspects of the product are weak, others, well, not-so-weak if... The result of a good/bad review usually comes out on the minus side for the product, in the consumers' eyes. Observations are important in these types of reviews, as they really are the best for letting us make up our own minds.

Don Slepian's review in the same issue is an educational review. The body of the review deals with layering. You can easily identify reviews of this type by such key phrases as ".... high minor 3rd harmonic riding way above a deep damped sinusoid."

The September review by Chris Barth is a very good review to review. No less than 27 paragraphs review a rather major advertiser of ESQ-1 voices. We are asked to trust Chris as an "aural talent scout." This type of interview is known as "authoritative." Because the reviewer talks regularly with the

almighty, he has complete freedom of observation and opinion in the review. What are the benefits of the authoritative approach to reviewing? First, being free to say what you want, by virtue of your superior stature and experience, allows you to be funny and clever, and this makes entertaining reading. Second, the reader comes away with a clear sense of OPINION. Authorities seldom waffle on issues they think they know something about. The problem with this approach to reviewing? Chris stumbles into it in the review. He is miffed that another reviewer could have come to a different opinion that HE did.

He even tries to tell us that it really is possible to describe a sound with words. He forgets that MY opinion may be that his wife looks like St. James, rather than Susan St. James. And it is equally valid for me to ask him if HE is "not deaf and blind." It simply is not possible to judge a sound good or bad. In short, we trade objectivity for entertaining reading and strong opinions. The more forceful and opinionated a reviewer is, the more on guard we must be to distill the facts from the bull, so to speak.

It is fitting to conclude this review of reviewers with Rick Hall's review in the October issue. It is the best ESQ-1 voice review I have ever read. Read it. The tone of this review, disregarding the product itself, is the tone we, as consumers, should expect from a responsible reviewer on something as ambiguous and subjective as "a sound." And Rick, I myself don't believe you are pompous to say that you have no idea of what a "bad" sound would be.

Bio: Alan Goldberg is a musician, computer analyst/consultant, and owner of Still Voice Audio, a MIDI studio and sound development shop in Minneapolis. ■

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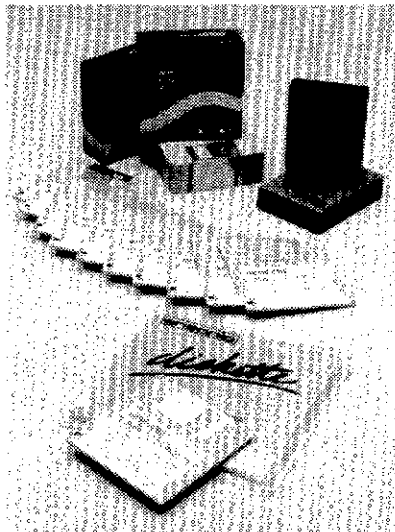
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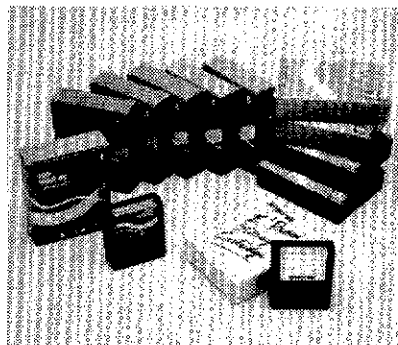
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REVIEW: WAVEFORM

Dr. T's Editor & Librarian for the Mirage and IBM PC

By James Willing

FOR: Mirage.
PRODUCT: WAVEFORM Version 13c.
PRICE: \$149.00.
AUTHOR: Jon Gold.
FROM: Dr. T's Music Software, 220 Boylston Street, Chestnut Hill, MA. 02167. (617) 244-6954.

This month we take a look at Waveform, one of the software packages from Dr. T for the IBM PC. Even though advertised as an editor/librarian, Waveform is primarily a sample editor for the Mirage. The librarian features do not exist in the version provided for this review.

Required hardware to operate the program is an IBM PC or compatible (manual suggests that if your system can run 'Flight Simulator' you should be able to run Waveform) with 640k of memory, MPU-401 or compatible MIDI interface, and a Color Graphics or Hercules Monochrome display adapter (or equivalent). A version of the program is also available by request that will utilize a math co-processor (if installed in your PC) to improve the speed that graphs are displayed. The program is supplied on a single copy-protected diskette. No provision is provided for installation onto a hard disk.

Waveform is organized into nine pages accessed from a main menu page. Pages are I/O (disk functions), DSPLY (waveform display and parameter editing), SAMPLE (sampling functions), LOOPS (loop display & editing), MASOS (masos parameter editing & functions), CONFIG (configuration parameter editing), PRGRM (program parameter display & editing), EDIT (waveform display & editing), and KEYS (allows limited playback).

Pages are accessed from the main menu either by using the cursor keys to highlight selection boxes or by pressing the first letter of the page you want to access. To directly select a function page you must enter its first letter in lower case. Upper case letters select the upper/lower keyboard, the sample # (1 thru 8) for the selected keyboard, and how values are displayed (in decimal or hexadecimal). Current selections are shown on the screen.

The I/O page allows waveform and configuration data transfer to and from the Mirage, and provides access to the Mirage disk drive. This is also where you would access the librarian functions if they were available. The manual states that the PC disk functions are not implemented in the current version, and attempts to select the PC disk function from the menu are ignored. A nice touch here is a "speedometer" display that is updated as information is transferred between the PC and the Mirage. This provides an indication that something is really happening during data transfers if you cannot see the Mirage display.

The DSPLY page is of questionable use due to the way the waveform memory is displayed and since no editing can be done here. Samples with high amplitude tend to look like random dots rather than recognizable waveforms when looking at the "bird's eye view" of all 256 pages. The single page waveform displays are much more useful. (Display on a Hercules is somewhat better than on a color display.) The Page up/down keys are used to scroll the single page display thru the current waveform. There is also provision for directly selecting a page number, but there is no reference for page numbers on the bird's eye view so page numbers must be approximated.

The SAMPLE page provides access to parameters 73 thru 76 (rate, frequency, level, threshold, & multisample) but does not allow the selection of the external Input Sampling Filter. Maybe not as important since it is no longer an option on current Mirages, but to owners of older units or the rack mount version a bit of an annoyance. From this page you can also generate a reference tone on the PC's internal speaker. Handy for matching against the sound to be sampled.

The LOOPS page splits the screen in half, the bottom half displaying the complete sample and is used for setting the coarse loop values. The top half of the screen then displays the ending and starting pages of the loop for fine adjustment. Cursor keys are used for setting loop values, and function keys are used for updating the Mirage and playing the sample. On the full sample view, an earlier criticism again holds true. For long samples the waveform plot is very hard to see as it breaks up into dots. Again a function of the resolution of the PC display. One minor problem was noted here; occasionally the page numbers displayed in the upper half of the screen would become jumbled. Annoying, but it did not seem to effect the program or the current sample data.

The MASOS page provides access to parameters 85 thru 96 (source start/end, sample start/end, etc...) and the standard MASOS functions (fade in/out, copy, etc...). The manual points out that MASOS functions are not executed on the sample data in the PC's memory, and you must transfer the Mirage memory back to the PC if you intend to do any further work on it. (Some programs will do this automatically.) Additionally, you should store the current sample before executing any MASOS function since once the function is executed there is no way to "undo" it in most cases.

The CONFIG page provides access to parameters 21 thru 25, 81 thru 84, and 97 (tuning, pitch bend range, velocity sensitivity, upper/lower balance, program link, MIDI settings, & software version).

The PRGRM page is actually two pages, the first allowing access to the filter and amplitude envelope parameters (both fixed and velocity modified) and the second accessing the general filter and oscillator parameters (LFO frequency/depth, filter crossover/resolution, oscillator mix/detune, keyboard tracking, & mono/mix modes). Filter and amplitude envelopes are graphically displayed on the lower half of both screens, and velocity modifiers are displayed as an overlaid bar graph.

The EDIT page is where you do the actual waveform editing. All editing is done via the cursor keys on the PC. No provision is made for either mouse or joystick input. Editing is done on a single memory page that you select from the main edit screen. The edit window displays a horizontal reference line at value 127 (the null point of the waveform) to assist in orientation. Counters above the window track cursor movements in both value and location within the page. A crosshair is displayed as the edit cursor (a bit difficult to see at times) and moving the cursor at each data point changes the value in the selected page.

The KEYS page displays a graphic of a piano style keyboard (as a reference only) and allows you to play back samples one note at a time by entering the key number to play. (This would also be a good place to be able to use a mouse.) Function keys are used here to adjust note velocity, mod wheel value, and

send an "all notes off" command or clear (reset?) the MIDI interface in the PC.

The manual is fairly concise although some typos were found, and though the software provided is version 1.3c the manual indicated that it was for version 1.2. Some functions listed in the manual apparently no longer exist in the program. The manual provides a brief (4 page) tutorial on the program, and the tutorial assumes that you have Mirage Sound Disk 3.2. Individual descriptions for each page in the program follow the tutorial. The manual ends with a short listing of abbreviations and conventions, hardware requirements, and helpful hints.

Unless you are fairly experienced with MASOS and sampling, I would suggest that you keep your copy of the Advanced Sampler's Guide close at hand. It makes a good companion manual for most editor packages, and provides more detail on the MASOS functions than would be practical to reproduce in the software manuals.

Overall, WAVEFORM looks like a reasonable editor for the Mirage but some work is still needed to realize its full potential. I consider its inability to be installed on a hard disk a major flaw, in addition to the current lack of the librarian functions. Having seen some of Dr. T's software for other systems makes this package somewhat disappointing. In all fairness though, with the exception of the librarian functions the package performs as advertised and displays no major bugs.

Bio: James Willing is a long time computer technician, software author, and (rank) amateur electronic musician. He has recently given up on his goal to become the next Thomas Dolby or Howard Jones and will now settle for not being laughed at when he sits down to play... ■■

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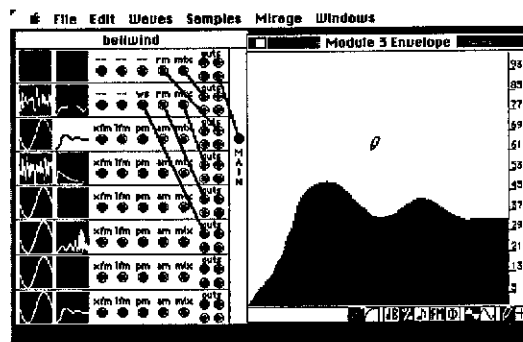
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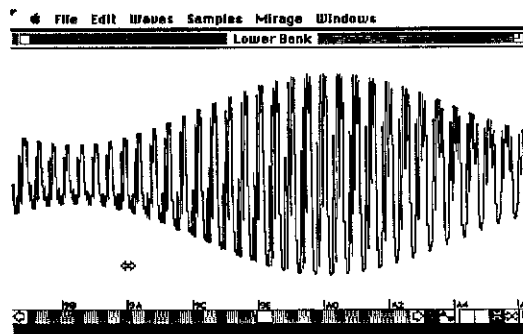
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These sounds are definitely upfront and very present -- without those ESQ cliches. It's obvious that the programmers took careful advantage of the programming capabilities of the ESQ. If you're looking for some progressive sounds for your collection, the Q-SPECTRUM should make a great addition." - KEYBOARD MAGAZINE Review - January 1988. (C) Reprinted with permission

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The Iguana

Review By Kenn Lowy

FOR: Mirage.
PRODUCT: The Iguana.
PRICE: \$39.95.
FROM: Leaping Lizards, 10026 36th Ave. NE, Seattle, WA 98125.
(206) 527-3431.

If you've been seriously considering buying a MIDI disk drive to store all your system exclusive information for your many synthesizers, then read this review before you put any money down on it. The IGUANA, from Leaping Lizards, may have made the MIDI disk drive all but obsolete for Mirage owners.

First a little explanation, system exclusive data contains stuff like sequencer information, and your synthesizer's sounds (programs). The exciting thing about the Iguana is that you can now save all of your sounds (from most synthesizers) on Mirage diskettes. You can save 3 files (filled with sounds/sequences) on each Mirage diskette. Each file can contain a mixture of sounds (40 sounds from your ESQ, all of the internal sounds from your DX7, a few sequences from the ESQ, the settings on your reverb unit). Sounds good so far doesn't it? But, does it work? And how much is it? (\$39.95!)

Basic info: you load this program by turning on your Mirage, and inserting the disk (the Iguana works with the Mirage, the DSK, and the rack mount). You'll see the word "Hi" when the program has booted up. You now have the following options available to you:

- 1) Edit a request message - this is a bit tricky and seems to apply to synths that cannot send out system exclusive data without first being coaxed into it. You have to type in the request in hex, which is frankly not too convenient for your average synth user. Luckily, just about every "real" synth available will send system exclusive data, so you can just leave this option the way it is when you boot up.
- 2) You can select a MIDI delay. This is a handy feature because it's possible that your synth may want to send its data faster than the Mirage can read it (or the other way around). MIDI delay will take care of this problem.
- 3) You can erase a bank (I don't think this needs an explanation).
- 4) Play a MIDI instrument (other than the Mirage, which is unusable as a sampler when the Iguana is booted up).
- 5) Re-boot the Mirage (which is better than simply turning it off and then on again).
- 6) Receive MIDI. You'll use this to send your MIDI data from your synth to the Mirage/Iguana. Getting info from a synth is relatively pain free. You press the REC key on the Mirage then the enter key. You have 3 seconds to begin the dump from your synth. Most machines have some sort of "dump" command, check your users manual for information on this. Once the dump has been completed a Hex number will appear on your Mirage screen. Write it down somewhere and note what you've dumped!

The Iguana likes Hex numbers a lot but you don't have to know beans about hex, you just have to write a few things down to keep track of what you've stored. Easy enough. Once the sounds are in the Mirage buffer, you can save them to a Mirage disk. You can also transmit MIDI (for sending sounds/sequences from the Mirage/Iguana, to other synths). If you send the info and get a "MIDI DATA ERROR", the problem may be that the data was sent too fast. Use the MIDI delay feature to slow things down a bit and try again.

Sounds great, but does it work with all synths? Unfortunately

no, it does not work with the Casio CZ series synths. This is because Casio uses an odd hand shaking communications protocol which other synths don't use as far as I know. This protocol is often used with computers connecting to other computers (often through a modem). I haven't run across any other synths that have this problem, but it is quite unfortunate because there are a lot of CZ's out there (including one in my home studio). It also points out that although the Iguana works with most synths out there, it does not work with everything! Steven Fox (the person who wrote the Iguana) has tried the program on a variety of synths (so have I), but it is impossible to try everything. This is not exactly a "try before you buy" type of product, but you might want to hop into your local music store and tell them you want to try it out on a few synths before you buy it. An optimistic note; it works on more than just synthesizers, it worked fine on my Roland GM-70 guitar-to-MIDI converter and should work on any reverb or effects rack that you might own. If you've just spent several weeks programming some great patches and want to have a backup of them somewhere, the Iguana will be happy to oblige you.

When the Iguana saves a bank (along with its HEX number), it's saving your synth's data. The Mirage buffer can hold up to 128K of this data. So, let's say you've just dumped all your DX7 sounds (Bank 00) and then you dump your ESQ sounds (Bank 01). Assuming you haven't used up all 128K (you'll get a message from the Mirage/Iguana if you do) you can now save all that info on disk (or continue saving other sounds).

A nice advantage to this system is that although you can only save three files to your Mirage disk, you can mix several different types of synth sounds within those files (as alluded to earlier). Pretty handy huh? One file for all your Ensoniq stuff, another for your Yamaha sounds, Roland sounds, etc. This can be very handy for musicians on the road. If you're not sure what sounds you'll need, you can just bring a few Mirage diskettes along with you and not have to worry about carrying anything else (like a computer and a librarian package).

The price is an ungodly \$39.95 which in my view is very affordable. The Mirage has a built-in computer, and it's nice to know that someone has taken advantage of it to write some software like this. Ensoniq is busy designing new synths, so they are leaving this stuff to third party developers (just like the computer manufacturers do). I had always thought Ensoniq was being lazy about releasing new enhancements to their machines. But when I put things in context, I realized that they are doing exactly what they should do. Designing the synths and the basic operating systems, and allowing others to enhance the system. Luckily, between the folks at Triton, Leaping Lizards and Upward Concepts, we have plenty of things to pour through.

The Mirage is no longer just a synth or sampler, it's also a computer with a disk drive! However, since I have (in all honesty) not had any hands-on experience with the MIDI disk drives out there, I cannot write that this will replace a MIDI disk drive. But it will save your sys ex data on Mirage diskettes. One final note (really!), I have been told that most MIDI disk drives will not send out requests for system ex data. The Iguana does. This is very important if your synth has no option for dumping its sys ex data. The Iguana will still be able to steal it away, while most MIDI disk drives will not.

[TH - Latest word at press time is that the MIDI DELAY feature only delays the rate at which data is sent FROM the Iguana (not TO), and that the latest version of the Iguana works entirely in decimal (with the exception of request messages, which are entered in hex), and that ESQ-1 sequence dumps can be recorded if the ESQ-1 is running os 3.0 or greater. An updated version of the Iguana will fix this bug for earlier ESQ-1 os's.] ■

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THE ESQ-1 MADE EASY

Review By Jim Grimes

FOR: ESQ-1
PRODUCT: "How to" video cassette, VHS or BETA
PRICE: \$59.95
FROM: Bo Tomlyn video
DISTRIBUTED BY: Key Clique, 3960 Laurel Canyon Blvd., Suite 374,
Studio City, CA 91604

How long has it been since you last saw your ESQ-1 owner's manual? Perhaps you acquired your ESQ-1 used and don't have a user's manual or maybe you are just too busy earning a living to stop and digest it all.

Well, there is still hope for those who haven't the time or inclination to dig into that wealth of Ensoniq knowledge. The Bo Tomlyn video offers the answer in the form of an 80 tape, "ESQ-1 Made Easy" with Walter Holland. This is the second title in the growing series of "Made Easy" videos.

Bo Tomlyn, having worked with artists such as Prince, Bruce Springsteen and Talking Heads, has made an excellent choice of instructor for this video: Walter Holland. Walter, a southern California recording artist for Coriolis Records, is involved in New Age jazz and electronic music. During the past 10 years, he has performed with Amber Route and Doppler Shift. In addition, Walter is a college professor, teaching a course in computer assisted art. This combination of talent makes "ESQ-1 Made Easy" a pleasure to watch.

The first impression of the video packaging is encouraging. The jacket promises to teach: techniques for sound creation and storage; an in-depth section on the use of the sequencer; creating a sequenced song; data cassette interface, and last, but not least... the ESQ-1 as a MIDI master keyboard. I have to admit, I was a bit skeptical that all these items could be addressed to any depth in the 80 minutes. Ready at my keyboard, I loaded the cassette in my VCR and waited.

Once the credits roll, you can hear what your ESQ-1 "should" be doing. The opening soundtrack is a cut from Walter Holland's "Relativity" album. The tape begins with an ESQ-1 key layout overview with a kind of simple familiarization of the soft buttons and control wheels.

The second section, "The Sequencer", immediately launches into the demo sequence tape that comes packed with every ESQ-1. Inserted onto the bottom of the tv screen is the ESQ-1 display window, which remains in view whenever the controls are being manipulated. The tape audio is excellent with a fair amount of digital reverb added to fatten the sound. The balance of this section is devoted to an original 'from scratch' sequence creation, with the beginning track laid down as Kick drum and Snare. The timing is purposely off to demonstrate quantizing to correct the notation. The second track adds Hihat. The third track becomes DIGPNO (digital piano) and the fourth track is composed of chords from an undisclosed Synth Organ patch. Each track is examined and added to develop the final song. After setting the mix volume for each track, the sequences are tuned into a completed background song, which is then used as a four track mix against live playing. A very effective demonstration. If the tape ended here, your money would be well spent, just to learn how easy it is to program and manipulate sequences.

The next section discusses Analog Synthesis vs ESQ-1 Architecture. In short, the relationships of the OSC, DCA and

filter are explained. There are no fancy graphics, just easy to understand 'chalktalk.'

The following section handles Patch Creation, designed to help anyone who has been intimidated about trying their hand at patch hacking. During this and the next two parts of the tape, a Flute patch is built from scratch first with an explanation of what a flute sound would look like on an oscilloscope. Unfortunately, it was hand drawn and not a real 'scope picture. Also, hearing a REAL flute sound would have helped to understand what changes had to be made to the basic sound envelope to emulate a flute.

Moving right along, we get to Modulation and work our way through some flowcharts in a discussion of attack time, release time, velocity and the like. The mod wheel is then set up to play flute or strings, depending on the setting of the wheel.

The Cassette Interface is next addressed to save and verify the flute patch. Unfortunately, this works better in the video tape than it seems to in real life. A later interview with Walter disclosed that this was the only part of the video taping that had to be done over because the tape would not save or verify. Anyone who has used the tape cassette port knows well and good that this is the weak link of the ESQ-1.

Finally, MIDI is addressed, albeit briefly, with an overview of MIDI controls and functions. Walter agrees that a whole tape would be needed to discuss MIDI more completely. And, yes, you guessed right, that is the subject of the next video tape in the Bo Tomlyn series.

The end of the tape has video pictures of two patch sheets, Flute 1, which is created during the tape and the basis for that patch, Start (aka: Basic). Even with viewing the patch sheets on a large screen tv, it was nearly impossible to see what numbers were used. A novice would go crazy trying to copy the material from a tv screen. This could easily be corrected by including the two simple patches as printed inserts in the packaging. (Note: Bo Tomlyn has assured me they will be including printed patch pages in all future cassettes. Anyone still needing a copy of the patch sheets, should send a note to Bo.)

Summary: A best buy for the beginning ESQ-1 user and for anyone who has never taken the time to read and understand their user manual. Walter makes the job painless as well as fun. He is an excellent instructor. The tape is professionally filmed and enjoyable to watch. It would be nice to see a possible followup aimed at some of the more exotic and complicated uses of the ESQ-1.

BIO: Jim Grimes has been involved with electronic music since 1976. A former bass and guitar player, he has turned his energies to keyboards and composing. His main interest is with New Age music and Fusion Jazz. In addition, he is an independent patch developer for Ensoniq corporation. He also, runs ESQUG-WEST, a southern California ESQ-1 user group, which, by the way, always welcomes new members. He can be reached at: P.O. Box 365, Harbor City, CA 90710

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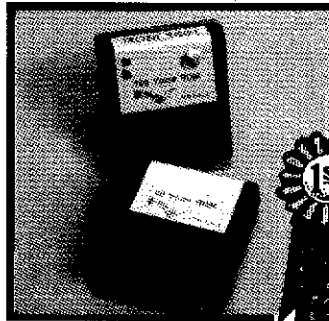
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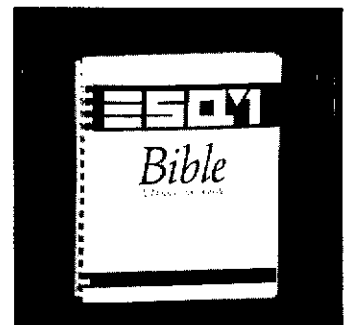
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Excerpt of review by J. Chandler for Electronic Musician January 1988

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Deciphering Mirage Sequences

By Nathan Miles

INTRO. The built-in sequencer on the Mirage has always fascinated me. It is not very sophisticated as sequencers go, but since it is implemented as part of the Mirage software it ought to be possible to make almost any modification or extension to it once you have the ability to alter the Mirage programming.

I read Dick Lord's ad for his Mirage Monitor Disk in the Hacker and immediately gave him a call. He told me that his program would allow the user to attach a terminal or PC to the MIDI ports of the Mirage. The attached PC could then be used to dump the contents of the Mirage memory, modify selected portions, and write the changed areas back to the Mirage disk. This seemed like just the tool I needed to go after some of my blue sky sequencing schemes so I ordered one on the spot.

I was very pleased with the monitor disk when it came. The documentation on how to use the disk was quite good. The documentation on the internals of the Mirage was a good introduction to some areas of the Mirage code. The Mirage code which determines the pitches to be generated was described in some detail. Unfortunately, the only information present on sequences was that the Mirage stored the sequence data in the memory area starting at "B800".

Those fortunate enough to have a PC with a terminal emulation program and a MIDI adapter would be able to just turn on their computer, boot up the monitor disk on the Mirage, and start peeking about in the guts of the Mirage. Since my IBM PC Jr. did not support any MIDI interfaces I needed to build a hardware box to convert from the MIDI electrical specification to the interface expected by the serial port on my PC. Dick supplies circuit diagrams for this purpose.

My next discovery was that the terminal emulator I had was too large to fit in the 128K of memory available on my PC. I managed to write a small terminal emulator in Turbo Pascal to allow me to speak with the Mirage. The terminal emulator is a program that reads anything the user types on the keyboard and sends it to the Mirage. Anything the Mirage sends is read from the serial port and displayed on the PC CRT. My terminal emulator is crude in its function and only works at 300 baud. Its sole advantages are that it fit my budget (free if you know someone who has Turbo Pascal) and it doesn't take up much memory. Appendix A has a listing of this emulator program.

After booting the Mirage from the monitor disk I was able to go in and display the contents of the Mirage memory. The program worked exactly as described. I would highly recommend Dick Lord's monitor program to anyone interested investigating or altering the Mirage programming. The only warning I'd give would be that you are going to have to become intimately familiar with microprocessor programming in general and the Motorola 6809 processor in particular to get very far in this.

SLEUTHING. After the Monitor program and the associated hardware was set up, I was able to play some simple sequences and dump the memory area where the monitor documentation said that the sequences were stored. When I played a single short middle C and dumped the sequence it looked like this:

```
B800 01 39 39 39 B8 0A B8 1D B8 0A 00 BC 1E 00 00 40  
B810 00 01 00 00 03 00 0D 3C 48 66 80 80 80 00 00 00
```

Looking at this and other short sequences I discovered the following facts:

- All sequences are terminated by a string of three 80's.
- The value at address B806, in this case B8 1D, is the address of the first byte of unused memory in the sequence area.
- The sequence data starts at address B80B. Each element of the sequence consists of three consecutive bytes. Therefore the sequence could be listed like this:

```
a) BC 1E 00  
b) 00 40 00  
c) 01 00 00  
d) 03 00 0D  
e) 3C 48 66  
f) 80 80 80
```

- Each note played is represented by two events. This first event occurs when the key is pressed. The second event occurs when the key is released. Each time a key is pressed an event (group of three bytes) is entered in which the first byte is equal to the key number plus 80. The note number for middle 'C' is 3C. $3C + 80 = BC$ which is the first byte in sequence line a).
 - Whenever a key is released an event is created in which the first byte is just the key number. In this case sequence line e) represents the point at which the key 'C' (3C) was released.
 - In key pressed/released events, the second byte contains an indication of the key's velocity. The bigger the value the greater the velocity.
 - The third byte of each event determines the number of internal clock 'ticks' that the sequencer waits between executing consecutive events on playback. The actual time it takes for the sequencer clock to 'tick' once is determined by Mirage parameter 87.
 - Initially, lines b), c), and d) had me stumped. They didn't seem to have anything to do with the single 'C' I played. Eventually I figured out that they were showing me the current states of the non-keyboard controls: pitch bend wheel, modulation wheel, and sustain pedal.
 - The pitch bend wheel entries start with byte 00. The second byte shows the amount of the pitch bend: 40 is neutral, greater than 40 makes the notes sharp, less than 40 flat.
 - The sustain pedal entries start with byte 03. The second byte shows the position of the sustain pedal: zero is up, nonzero is down. A new entry is created whenever the pedal changes positions.
 - The modulation wheel entries start with byte 01. The second byte is zero when the wheel is all the way in the off position and gets larger as the wheel is rotated upward. This entry finally explained to me a mystery which had plagued me for a long time. Sometimes when I would record a sequence my Mirage would allow me only 15 seconds and then take itself out of record mode, even if I'd only played 1 note! Other times it worked fine. I finally discovered that the mod wheel was doing me in. If I kept it all the way off everything worked fine. If I accidentally had it on, the sequencer would fill up all its available memory with a bunch of '01 xx xx' mod wheel entries. I'm not sure why it does this but it may be because of jitter in the converter that reads the mod wheel position.
- Finally, here is our completely deciphered sequence. Longer sequences just consist of more entries of the same form.

```

BC 1E 00 Middle 'C' key pressed
00 40 00 Pitch bend wheel set to neutral value
01 00 00 Modulation wheel off
03 00 0D Sustain pedal off
3C 48 66 Middle 'C' key released
80 80 80 End of sequence

```

APPLICATION. My main interest in understanding sequences is to be able to modify them in useful ways. An example of this is dealing with the minor problem of making sequences that have an appropriate delay at the end when they are played in repeat mode. If the delay is too long or too short the rhythm is ruined.

The problem is easily fixed once you know how the sequences are stored. The third byte of the last sequence entry (the one right before the 80 80 80) contains the number of clock ticks that have to pass between the end of the last note and the sequence repeating.

In order to find the ending address we dump the value at location B806. We then need to subtract 4 from this in order to back up past the 80's to the timing byte we are looking for.

Once we have the address of the timing byte we can use the monitor to alter it up or down. The portion of the monitor called by Dick the "el-cheapo instant byte boffer" allows us to put the address of the byte we wish to modify in Mirage parameters 74 and 75. Adjusting the value of Mirage parameter 76 will then alter the timing byte up and down. This value can be adjusted with the increment/decrement keys while the sequence is playing

until the correct timing is heard.

In our example sequence from the previous section we would first look at location B806 and B807 and find the sequence end address --> B81D. We would then subtract 4 from this value to get B81B. After that we would set Mirage parameter 74 to B8 and Mirage parameter 75 to 1B. We could then start the sequence playing and alter the value of Mirage parameter 76 while the sequence is repeating. When the timing sounds right, stop the sequence and save it.

Some users may be interested in the fact that the above operations can be performed using the monitor disk without any additional hardware such as a PC hooked up to the Mirage. All the required manipulations may be done from the Mirage.

CONCLUSION. I hope this article has clarified the structure of the sequence storage in the Mirage and gotten some of you started thinking about possibilities for altering recorded sequences. I intend to investigate the possibility of adding some code to the Mirage to allow modifying pre-recorded sequences to make it easier to hear exactly what is being played.

Bio.: Nathan Miles is a professional computer programmer who gravitated the field when he discovered it was his only alternative to working for a living. His keyboard skills have been compared to those of Keith Emerson: "He plays one millionth as well as Keith Emerson." ■■

APPENDIX A: Mirage Terminal Emulator

This program is written in Turbo Pascal. Borland International has sold about a zillion copies of Turbo Pascal so ask around among everyone you know who owns a PC and you can probably turn up someone with a copy. Ask them to compile the following program for you. Everything inside curly braces, '{' and '}', is a comment and may be omitted when you are typing the program in. Mirage parameter 73 must be set to 00 to communicate with this program.

```

{
  This program allows an IBM PC or compatible to communicate through its COM1 port with the Mirage
  monitor. ^C will terminate the program.
}

program term;
var cc: char;    { most recent character }
procedure baud;
{
  The "baud" procedure sets up the COM1 port to be
  configured for: 300 baud, 8 data bits, no parity.
}
type result = record
  ax,bx,cx,dx,bp,si,di,ds,es,fi:integer
end;
var r:result;
begin
  r.ax := $0043;    { setup BIOS argument }
  intr($14,r)      { do rs232 BIOS interrupt }
end;
begin
  baud;            { set baud rate }

  while true do begin
    if keypressed then begin { if a key has been pressed }
      read(kbd,cc);          { read the character }
      write(aux,cc)         { send the character to the Mirage }
    end;

    { $2fd is the address of the COM1 port on the PC Jr. }
    { $3fd is the address of the COM1 port on other PC's }

    if port[$2fd] and 1 <> 0 then begin { if Mirage has sent a character }
      read(aux,cc);           { read the character }
      write(cc)               { write it to CRT }
    end
  end
end
end

```

Rhythm Tracking With the Mirage: Making a Sequencer Click Track

By Dave Caruso

PROBLEMS AND SOLUTIONS

It's handy using a click track to get all your Mirage sequences timing-perfect (or as close as humanly possible) without using a metronome or a drum machine. For any of lots of reasons you may find yourself in this position, so if you do and if you're interested, here's how I do it.

WHAT YOU'LL NEED

What you need is your Mirage, Ensoniq and user-created disks, blank formatted disks, a few 1/4" phone jack cords with one end of each convertible to "RCA", a set of headphones, and a four-track cassette (hereafter referred to as "FTC"). An amplifier with two inputs will serve the same purpose as the FTC as far as monitoring the Mirage, but with the amp you can't play silently - unless it's a headphone amp.

In actually recording the sequence you'll want to use an external time keeper (metronome or drum machine), but once it's committed to disk you won't need it for this purpose again. If you don't own either, borrow one for a day.

MAKING THE CLICK TRACK

Copy Ensoniq's "Rock Drums," "Electronic Drums," and "Ambient Drums" onto one blank disk by loading them one at a time and saving with parameter 13 (P13). Now you have an all-drums disk to use for convenience and a back-up of the original sounds. Anyway, it's on this drum disk that we're going to store the click track.

Load "Rock Drums," lower, and make sure P88 is "ON" so that the sequencer will play continuously until you stop it. Pick a mid-tempo speed in your head for quarter notes, set your external time keeper accordingly and start it. (If you're using a drum machine, monitor it any way you like since this is a one-time thing). Push "REC SEQ" twice on the Mirage. Listen to the beating from your external time keeper, and on Key #6 of the Mirage play along with it for four beats. On the fifth beat push "PLAY SEQ" and you'll immediately hear if your timing was right or not. Don't expect your sequence to stay in time with your external time keeper, though. Just make sure it sounds correct by itself. If it isn't right, try a few more times. If it's correct, save to disk by pressing "SAVE SEQ" followed by "1" and "ENTER." Label Sequence 1 as "Click Track," and adjust the disk protect tab to prevent accidental erasure.

USING THE CLICK TRACK

Now each time you use the click track you'll need to record it to cassette. Why didn't we just record to cassette in the first place? Because each tempo and length of sequence will be different, and once it's committed to tape you don't have much control over speed. The Mirage sequencer has a variable speed built right in. Use P87 and your "UP" and "DOWN" controls to speed up or slow down the internal clock rate, and you'll have all kinds of tempos to work with. You can even

adjust these while the sequencer is running and hear the differences in speeds as they change.

Okay, so now suppose you're separated from all the drum machines and metronomes in the world and you want to use your sequencer being sure of your timing. Connect your Mirage output to the FTC input, channel one. Connect your headphones to the FTC, insert a blank cassette, and push "RECORD" and "PAUSE". Push "PLAY SEQ" on the Mirage in order to get a recording level (not to be confused with a "recording contract," which is a bit trickier to get). Now record several measures of the click track sequence at the tempo (internal clock rate) of your choice. You've just freed the sequencer up to make your drums sequence.

From here you have the choice of: 1) making a FTC demo in which the click track will be erased after the rhythm track is recorded, or 2) simply monitoring your cassette click to make new sequences to save to disk.

MAKING A SEQUENCE

Let's do the latter, since the subheading already says so. Connect the Mirage output to input 2 of the FTC. Set the FTC controls so you don't erase the click recorded on track one, and also to monitor/record on track two. Now you can hear the click as you make your sequence. Load your favorite drum sounds. Push "REC SEQ" on the Mirage twice, push "RECORD" on the cassette, and play any combination of drums you can handle. Now you're on your way. Do each drum separately and over-dub if you like, but always "SAVE SEQ" before adding a new part in case something goes wrong.

Two hints: 1) use sequence 8 as a temporary storage or "scratch pad" until you get the sequence perfect and can transfer it to the sequence number of your choice. 2) try to play all instruments which will be heard on the downbeat of measure one all at once on your first pass through the sequence. It gets kind of tricky trying to add that first note on overdubs unless it's played (it seems to me) slightly late.

SEQUENCE COMPATIBILITY

Remember that your sequences and your click track sequence are not necessarily compatible or appropriate for use with any drum disk you come across. The drums on the sequence have to correspond to the same MIDI keys as the drums on the disk you play it with. That's why I try to follow Ensoniq's lead in keeping my own sampled drums in the same key configurations. That way you can switch back and forth, for instance, between "Rock Drums," "Electric Drums," and your own drum sounds, extending the usefulness and versatility of a single sequence. ■

Imitating Digital Synthesizers With The ESQ-1/SQ-80

By C.R. Fischer

One of the strongest features of the ESQ-1 (or SQ-80) is its hybrid voice architecture, which combines digital wavetable oscillators and an analog filter/amplifier chain that gives the best features of both worlds. When I first bought my ESQ-1, I found myself using static waveform mixtures and adjusting the timbre with the filter (analog habits die hard). But many sounds produced by digital synthesis are produced without any analog filtering or processing, and I soon began to experiment with techniques for imitating digital sounds produced by instruments like the Yamaha DX or Casio CZ series. I'm not implying that the ESQ-1 can replace a DX-7, but with a little forethought and practise, some very satisfying imitations can be produced.

Frequency Modulation (FM) and Phase Distortion (PD) synthesis have been discussed in many articles, but they share a similarity in operation: they both start by generating a sine wave fundamental, and mix in a more complex waveshape to generate a dynamic timbre. At its simplest, a two-operator FM synthesizer is pictured in Fig. 1. With the output of modulator operator #2 off, carrier operator #1 produces a plain old sine wave. As the amplitude of operator #2 is increased, sidebands are generated which increases the harmonic content of the signal. The harmonics produced depend on the frequency ration of the two operators, with the amount of harmonics produced depending on the output level of the modulating operator (#2). Of course, DX-type machines have either 4 or 6 operators and a lot of parameters for tweaking the sound, but the basic principle remains the same.

Similarly, Casio instruments use a process known as phase distortion to create their sounds. Two sine waves are generated with a 90 degree phase difference, and then one or both waves are distorted and recombined to generate harmonic spectra. Just as in FM synthesis, you start with a sine wave fundamental, and mix in harmonic or inharmonic overtones. The more overtones present, the brighter the sound quality.

The wavetable DCOs on the ESQ-1 make imitating these timbres fairly straightforward: start with a sine wave fundamental, and mix in a variable amplitude bright waveshape to control the brilliance of the sound. Let's try it. Call up the "Basic" preset, and make the following edits:

DCO 1): LFO Depth=00, Waveshape=SINE, DCA 1: Level=32

DCO 2) LFO Depth=00, Waveshape=SAW, Octave=+1, DCA 2: Output=ON, Modulation=WHEEL, +63

After you've entered these parameters, make sure that the MOD wheel is all the way back, and play the keyboard. Begin advancing the MOD wheel, noticing how the sound gets brighter as the wheel is moved forward. Since we've tuned DCO 2 one octave above DCO 1, it generates harmonic overtones of DCO #1. Notice that you have considerable control over the timbre by varying a single parameter.

Next, substitute other waveshapes for the sawtooth on DCO #2. Because each waveform has its own harmonic spectra, you can simulate various carrier/modulator frequency ratios by tweaking the waveshape. I found the bell, piano, and additive synthesis waves especially useful.

While using the wheel to control sound quality is fun, the real power comes from using the ESQ-1 envelopes to create dynamic spectrum. Use ENV-1 to control the fundamental envelope, use ENV-2 to control the harmonic content (that's a VCF envelope to analog hackers, and a modulator envelope for digital nuts). Because the fundamental has the highest amplitude in most real-world sounds, it should have a fairly high level, and its envelope should last longer than the spectrum envelope (see Fig. 2). By adjusting L2 and T2, you should be able to create a variety of percussive sounds quickly and easily. By programming more velocity control (LV) into ENV 2 than into ENV 1 we can control the brilliance from the keyboard velocity.

Now you're on your own. We haven't even discussed using DCO #3 to generate its own harmonics, or using an envelope to balance two different harmonic series (using the envelope to turn up DCA #2 while turning down DCA #3, or vice-versa), or even using the filter for the heck of it (try finding the VCF on your DX-7). Good luck, and please let me know of any interesting results c/o Mescal Music P.O. Box 5372, Hercules, CA 94547.

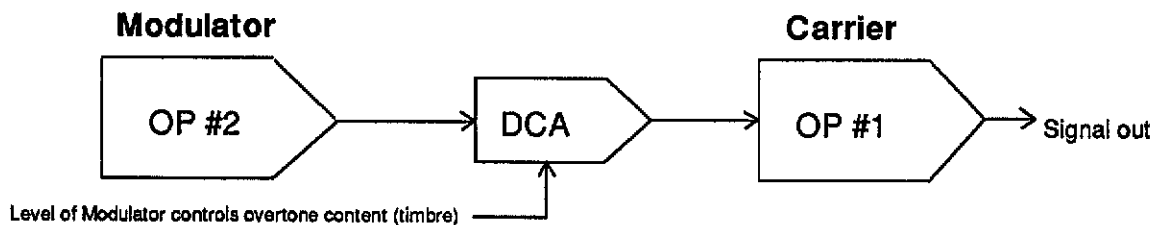


Figure 1 - a simple 2 operator FM synthesis example.

MIRAGE INSTRUCTIONAL VIDEO TAPES

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MIRAGE PRODUCTS REVIEW VIDEO VOL. 2

A review of the following products on video:
 Ensoniq *Visual Editing Systems* for Apple II+/E and Commodore 64/128.
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 Blank Software's *Sound Lab* for Apple Macintosh.
 Kaupass + Lemke *MUMEP/Oasis ST* for Atari ST.
 Neo-Sync Lab's *Mirage-Aid* for Commodore 64/128 and Apple.
 Black Squirrel Software's *MIDI Additive Software Synthesis* for Apple II.
 Upward Concepts' *Multi-Temperament Disk and User Defined Micro-Tonal Scales*.
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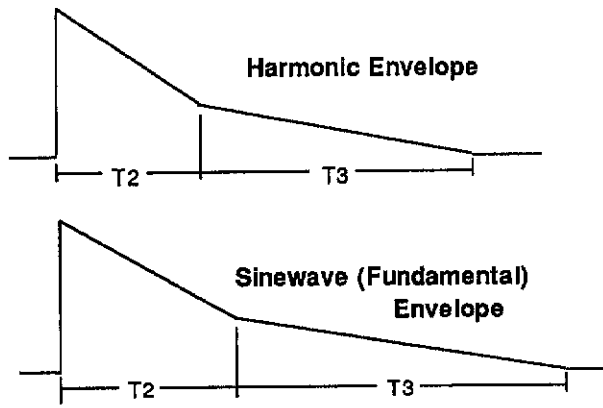


Figure 2. For best results, the envelopes should be scaled so that the fundamental envelope lasts longer than the harmonic envelope. The decay time (T2) of the harmonic envelope has an important effect on the timbre of the sound produced.

Bio: Charles R. Fischer is a professional keyboardist, synthesizer programmer, writer, and electronic designer. He runs Mescal Music, an electronic music consulting and design firm, and has written articles for magazines like Electronic Musician and Modern Electronics. He has also gigged everything from C/W to Rap. ■■

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Mirage Sample Reviews

By Dave Caruso

For: Mirage
Product: Disks #4, 9, and 10
Price: \$17.95 each, full set of 16 disks for \$175.
From: Livewire Audio, P O Box 561, Oceanport, NJ 07757. (201) 870-3115.

This month's disks are from LIVEWIRE AUDIO. They utilize the Steven Fox (Leaping Lizard) E.2 OS, which means the disks are copy-protected. Backups are \$5 per disk, or \$2 per disk for the entire set.

LIVEWIRE AUDIO DISK #4 - ANALOG DINOSAURS

1. MINIMOOG

L1: "Fat Sawtooth Bass" sounds like a cross between a sawtooth wave and the part of the sound your mouth makes when you play a jew's harp. That may sound strange, but it's actually a pleasing effect. It has a round attack and a fuzzy tone that's not piercingly bright. The loop is imperceptible on many notes and nearly so on others.

L2: "Octave-apart Bass." Picture a clav-synth creation with a low range and a long sustain. It's fuzzy and you hear the combined octaves like the name says.

L3: "Squarewave Vass" is a feisty hybrid of the best of the first two sounds, only brighter.

L4: "Moog Filtersweep" has a gradual attack, a medium-fast, up-and-down sweep, and a slow release. The brightness of the release is velocity sensitive, and the attack can be faster with a lower setting of parameter 50.

U1: "Detuned Brass" has a soft attack, a brief swell with increasing brightness, then a return to the mellower starting tone with sustain. Great for slower playing, especially with chords, because of the built-in crescendo. The loop can only be heard if you play very slowly and softly.

U2: "Octave-apart Brass" is a good sound - well, actually, two different sounds. Keys 30-47 play a two-octave brass with enough detuning to approach the tone characteristics of steel drums, while keys 48-61 don't have an obvious amount of this effect. Also, there is more noticeable noise at the top ends of these samples than with those previously mentioned.

U3: "Luckyman Squarewave." Authentic. The quickly-repeating, regular cycling sound is a distraction for me. It's the same speed on every key, so I don't know what causes it. It's still a great sound.

U4: "Looped White Noise." Pseudo-gunshots if played staccato, with a slow filter sweep on sustained notes. The accompanying description says to use this sound as a starting point for new sounds.

2. ARP STRING ENSEMBLE

L1/U1: "Straight String Ensemble" doesn't have the string sound we're used to today, but it's not supposed to. (That's why they call 'em dinosaurs.) I find the attack to be more like a horn than a string sound. There is obvious loop clicking with single sustained notes, but chords mask this. There is detuning on the original sound.

L2/U2: "Slow Attack/Pretty Strings." Same sample, with filter settings more deserving to a string sound. I like this one.

L3/U3: "ARP Filtered Horns." A quick, mellow attack and a short sustain turn the sample into some nice horns. Again, though, watch out for the clicking.

L4/U4: "Incredibly Fat ARP Strings" is what you get when you brighten up the filters and give a long sustain and a hard attack.

3. LOWER: Jupiter 6
UPPER: Mellotron CHOIR

L1: "Bend-up Brass." Although the bend must of course increase in speed as you go up the scale, it's still a nice, mellow brass sound. Good loop.

L2: "Jupiter Bass Synth." A fat, detuned sound - useful, with a good loop.

L3: "Jupiter Mondocello." Interesting. A little past the first octave, the cycling quality (loop?) is unattractive. Don't think "cello" so much as "brass with string filter settings."

L4: "Thunderbolt" is a sound effect sort of like a space age weapon being fired.

U1: "Straight Choir" is churchy, haunting, and realistic. If you hold the notes too long you'll find that the loop is a bit obtrusive.

U2: "Fast Fade-in Aaah's." Slower attack, quicker release, chorusing.

U3: "Fade-in Aaah's" with filter sweep.

LIVEWIRE AUDIO DISK #9 - ELECTRIC GUITAR

1. ELECTRIC LEAD GUITAR

L1/U1: "Lead Guitar." - This reminds me of the guitar sound used in the intro to Dire Straits' "Money For Nothing."

L2/U2: Added velocity sensitivity.

L3/U3: Same as L1/U1 with chorusing.

L4/U4: Same as L3/U3 with long release.

2. CLEAN FENDER STRATOCASTER

L1/U1: "Straight Strat." Here is a fantastic sample whose filter settings don't nearly do it justice. If you don't want this to sound like a banjo, try raising upper and lower parameters 42 and 52 to 31. Then set the top key (P72) of wavesamples 1, 2, 4, and 8 in the lower memory to "28", giving the upper E string a distinct sound from the other "strings." Now, add some reverb and use the sustain pedal and you've got a beautiful sound that has real strat characteristics. I like this a lot.

3. ELECTRIC GUITAR FAT FIFTHS

L1/U1: "Straight Power Chords." There are two different power chords, one for each keyboard half. The lower sound has a similarity to Ensoniq disk A7, lower sound 1. The upper sound is a slashed-speaker thrash chord that smartly omits the implied major third harmonic which can limit its use. (The lower sound and Ensoniq's guitar chord have this implied third.) So the upper sample from Livewire is more flexible in its applications since it can be used as a major or a minor chord, but there's a tradeoff: the upper sample isn't looped. These samples can be played together very effectively. Great Stuff!

LIVEWIRE AUDIO DISK #10 - TX816 SAMPLES

1. TX816 CLAV/PIANO

L1/U1: "Velocity Sensitive Clav/Piano." A good sound, but an average sample. There is too much on this sample in the way of aliasing and presumably unintended harmonic content for it to be great. The lowest octave sounds the best, and every octave after it adds more undesirable elements that keep it from being one smooth sample. As a tack piano playing fast rock chords, I'll admit it sounds real nice. Try lowering it an octave (LW1, P67+3) to get more quality range out of it.

L2/U2: "Piano/Clav (Mellower)." This like having more piano and less clav. It's a bit cleaner sounding than the first program.

L3/U3: "Percussive Synth." A very nice pluck at the beginning of this mellow synth, and an indefinite sustain at the end.

L4/U4: "Piano to Clav Mix on Mod Wheel." The piano sound is nice for a TX. The clav suffers from high-end-itis, and the mod wheel application is a great idea, conveniently letting you mix between the sounds to your own taste.

Unless I'm mistaken, this sound, all four programs, is held back by the fact that only half of the Mirage's memory (or less) is used for the samples. In other words, L1/U1, L2/U2, and L3/U3 used only 40-FF of LW1, and was stretched over the entire keyboard. L4/U4 does the same, only with 00-FF of LW1. The upper memory isn't used at all, and the upper octaves of all four programs suffer for it - although L4/U4 suffers the least.

2. BELL/STRING

L1/U1: "Bell/String." I'm in love. MIDI this to a Rhodes sound as soon as you get it and play the introduction to Steve Perry's "Oh, Sherry." It's also good for the opening notes of the Beach Boys' "Sloop John B."

L2/U2: "Glock/Muted Pad." Just the bell from L1/U1.

L3/U3: "Glockenspiel." Halfway between the full-length version (L1/U1) and the short version (L2/U2.)

L4/U4: "Fade-in." Slow fade-in, long release. I like all of these programs. The loop is noticeable.

3. LIVEWIRE HARMONICA

L1/U1: "Dirty Blues Harp." Aliasing, loop clicking, etc. Destroy this sound on all four programs.

L2/U2: "Clean Harmonica."

L3/U3: "Chorused Blues Harp."

L4/U4: "Chorused Clean Harmonica."

On the positive side, if this sample could be improved, the original sound it was taken from has a fantastic tone to it. The accompanying notes say "the best harmonica we've heard." Well, if Livewire were to resample this sound with the expertise Ensoniq used on their harmonica sample, I'd agree. When it becomes necessary on a sampler to choose between a great sound/terrible sample, and a good sound/great sample, I'll take the latter every time.

Final comments:

There were no sequences on the disks I reviewed. I believe (as Ensoniq does) that sequences are an important part of a sound disk because they help show the sample in its best light. To me, leaving off the sequences as a time-saving move has a serious drawback. Not all keyboardists can emulate guitars, harmonicas, etc. Please reconsider this move, Livewire.

These sounds accurately represent the sounds they're named for. The loops aren't always perfect, but the sounds usually are. My guess is that when the sampling skills of Livewire's disks equal the recording skills, Livewire will be an unstoppable leader in sample libraries. ■

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THE HACKING PART...

PROGRAM: Koto.3 (by Nick Longo)

This is a very nice patch and certainly stands on its own. It inspired the following variation.

Where Nick's sound is in octaves I wanted each note to sound like a single string. I also wanted more midrange, and a certain pluckiness. I got this by using different waveforms. Make the following changes to the OSCs.

OSC 1: Change FINE to 00. Change WAVE to PIANO. Change MOD 1 to ENV 1 * 02 and MOD 2 to *OFF*.

OSC 2: Change FINE to 00. Change WAVE to PULSE2. Change MOD 1 to ENV 1 * 02 and MOD 2 to *OFF*.

OSC 3: Change OCT to 0. Change FINE to 00. Change WAVE to VOICE 1. Change MOD 1 to ENV 1 * 02 and MOD 2 to *OFF*.

By setting fine tunings all to 00 we help emphasize the sound of a single string. When you first pick a string the pitch raises and lowers very fast. We accomplish this by modulating the OSCs with ENV 1.

Select ENV 1 and set its parameters in the following way:

L1=0 L2=28 L3=0 LV=63 TLV=0 T1=0 T2=19 T3=16 T4=0 TK=0

DCAs 1, 2, and 3 are unchanged.

Select the FILTER page and change FREQ to 29. Change RES to 2].

Finally I wanted the string sound to have quick initial decay. I set up DCA 4 so if you hold the keys down the sound decays quickly. If you release the notes very fast, they will sustain for a while. Make the following changes to DCA 4.

L1=63 L2=28 L3=0 LV=0 TLV=0 T1=0 T2=25 T3=37 T4=31 TK=00

I hope both of these patches help you create your own unique sounds.

Erick Hailstone
The MIDI Connection

THE PATCHING PART...

PROGRAM: BELSYN

By Marc Hoppe

This patch is an additive synthesis sound with a dominant bell timbre. The mod wheel creates a slight pitch bend.

[Sam Mims - I found the mod wheel to add a kind of heavy detuning. This may or may not be useful in your particular context. Try changing the wheel to control vibrato, applying all three oscillators as a modulator.]

PROGRAM: FLUTE 1

By Preston Connick

Here is a sample from our Songwriter Series 1 sound set. This patch produces a natural sounding metal flute that is particularly useful in medium to rapid melodic passages. OSC1 supplies the fundamental flute tone using the traditional SINE wave. OSC2 produces the harmonic front end "chirp" and the sustained "shadow" SINE wave tone turned up one octave. OSC3 supplies the "chiff" and breath completing the sound. MOD wheel controls vibrato/tremolo. ENV1, 3, and 4 have LV settings of 15, 30, and 30, respectively, making the patch velocity sensitive for greater expressive control. Play around with this one and come up with your own interesting variation.

[Sam Mims - Like the man says, this is a pretty good imitation of a flute sound. If you like a bit less breath noise try lowering DCA3's ENV1 value to about 47. Also, you might try setting the mod to WHEEL on LFO1 for control over the vibrato.]

PROGRAM: U2 EDG

By Doug Fietsch

No comment.

[Sam Mims - This is a tight staccato sound, with a nice built-in echo. The echo rate is controlled by the frequency of LFO1, in case you want to alter this to suit your taste. Holding a note down closes the filter, making each subsequent echo darker. Striking a note and letting up the key quickly leaves the filter open, with the echo staying bright.]

PROGRAM: Koto.3

By Nick Longo

Here is a sound I know Chris Barth will love - a phenomenally realistic Koto! I know you've heard this sound attempted before, but have you ever heard a real Koto? Turning on the AM makes it thinner, more metallic.

[TH - See Erick Hailstone's HACKING PART for more commentary on Koto.3.]

ESQ-1 PROG: BELSYN BY: MARC HOPPE - TECHNESTRA

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	BELL	OFF	-	ENV1	1
OSC 2	-1	0	0	VOICE1	OFF	-	OFF	-
OSC 3	1	0	0	SYNTH2	LFO1	4	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	ENV2	9	OFF	-
DCA 2	63	ON	OFF	-	OFF	-
DCA 3	63	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	90	0	0	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO3	40

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	1	ON	OFF	TRI	7	63	9	WHEEL
LFO 2	20	OFF	OFF	TRI	0	0	0	WHEEL
LFO 3	1	OFF	OFF	SAW	63	33	0	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-8	26	26	26	11	31	24	19	61	6
ENV 2	63	19	-22	9	20	24	32	0	20	9
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	63	36	10	0	0	0	44	63	34	0

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

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

ESQ-1 PROG: FLUTE 1 BY: P. CONNICK, MUSICBANK

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	SINE	LFO2	0	LFO1	1
OSC 2	1	0	0	SINE	OFF	-	OFF	-
OSC 3	0	0	0	NOI2	LFO1	63	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	0	ON	ENV2	63	LFO2	11
DCA 2	22	ON	ENV3	54	OFF	-
DCA 3	0	ON	ENV1	57	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	15	3	30	ENV1	47	OFF	-

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

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	21	ON	ON	TRI	10	6	20	OFF
LFO 2	21	ON	ON	TRI	15	6	35	WHEEL
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	45	35	30	15	0	6	20	21	25	30
ENV 2	63	63	63	0	0	17	0	0	32	0
ENV 3	63	35	35	30	0	0	20	28	15	0
ENV 4	63	63	63	30	7	15	25	26	30	0

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

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

ESQ-1 PROG: U2 EDG BY: DOUG FIETSCH

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	PULSE	LFO2	4	OFF	-
OSC 2	0	0	2	PULSE	LFO2	4	OFF	-
OSC 3	0	0	2	PULSE	LFO2	4	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	42	ON	LFO1	-63	OFF	-
DCA 2	35	ON	LFO1	-63	OFF	-
DCA 3	42	ON	ENV2	63	LFO1	0

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	0	0	8	ENV3	50	LFO1	-63

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

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	25	ON	OFF	SAW	63	10	44	OFF
LFO 2	21	ON	OFF	TRI	0	0	0	WHEEL
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	63	50	45	0	0	0	50	63	20	9
ENV 3	63	8	0	8	0	0	50	63	51	9
ENV 4	63	63	0	0	0	0	63	40	9	9

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

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

ESQ-1 PROG: koto.3 BY: NICK LONGO

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	2	SQR2	ENV1	1	ENV1	-2
OSC 2	0	0	2	4OCTS	ENV1	4	ENV2	-3
OSC 3	1	0	1	SYNTH1	ENV2	1	ENV1	-1

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	ENV3	63	-	-
DCA 2	63	ON	ENV3	63	-	-
DCA 3	63	ON	ENV3	63	ENV1	-30

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	35	0	20	ENV3	50	ENV2	-20

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	4	ENV3	63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	-	-	-	-	-	-	-	-
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	13	9	6	0	0	3	48	30	26	0
ENV 2	-31	21	6	0	0	2	4	59	26	38
ENV 3	63	16	0	30	0	0	20	20	34	9
ENV 4	63	28	0	30	0	0	39	27	32	4

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

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

CLASSIFIEDS

USER GROUPS

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

SAMPLES

LOOKING TO TRADE MIRAGE SAMPLES. Send a list and I'll send mine. I'm especially looking for "Yello" samples and similar type sounds. Send to: Rick Glassman, 10883 Palms Blvd., #1, Los Angeles, CA 90034.

MIRAGE AND EPS OWNERS. New!!! Professionally Programed high quality Samples. Generated with Sampling Filter. TOP 40 HITS - Arcade - Special Effects - Movies - Voices - Adult!! Too many to mention. \$9.95 per disk. Demo Cassette and Listing: \$2.00. ORBITAL ACTION MUSIC, PO Box 55191, Grand Junction, CO 81505.

MR WAVESAMPLE. Mirage samples taken from DX7, Prophet, Emax, Oberheim, also Novelty, Special Effects, Animals, Hits, to name a few from one of the largest collections available. Compatible with all Ensoniq samplers. \$9.95 per disk. Send \$1.00 for listings to: 162 Maple Place, Keyport, NJ 07735. (201) 264-3512 after 6 pm EST for details.

WOWI Novelty Disks - The Three Stooges, Johnny Wiesmeuller "Tarzans," Bugs Bunny, Johnny Carson Show Hits, Warner Cartoon Clips, etc. Top Quality! For free information send SASE to: Talence Recording, 906 E. Elmwood Ave., Burbank, CA 91501.

High quality samples for the Ensoniq Mirage. Orchestral instruments: string quartet, brass, timpani. Electric instruments: piano, organ, guitar. Ancient instruments: lute, viols, medieval harp, recorders, clavichord, harpsichord. Many more. Barry Carson, Minotaur Studios, 4 College St., Canton, NY 13617.

EQUIPMENT

TX812 and Editor/Librarian for the C-64 and LOTS of sounds. \$350. Call Al West after 5:00 CST, (318) 688-6468.

FOR SALE: ARP Odessey, Hohner Clavinet E7, Musser M44 Vibes. Call 201-264-3512 after 6 pm (EST). Jack.

FOR SALE: Mirage keyboard (1 year old) with IVM Memory Expansion, 14 Ensoniq sound disks, case, keyboard cover, MASOS, & Advanced Samplers Guide. Absolutely perfect condition. \$1050. Steve, 201-506-0285.

SOFTWARE

Sound Designer (tm) Visual Editing Software for the Mac. \$149.00. Ensoniq VES for the Apple IIe. \$99.00. Contact: David Rogers, Chagrin Falls, OH. (216) 543-1931.

Selling: Dr. T's ESQ'APADE for Atari ST - \$78. Brian, (518) 851-2621 after 6 pm EST.

ESQ-O-MATIC!! Original Pro-quality ESQ-1 PATCH/SEQUENCE LIBRARIAN for ATARI ST, only \$39.95!! Elegant, user-friendly system, handsome graphic display, 120 voices in RAM simultaneously! Create, name, reload Voice and Sequence Files, print

Patch Sheets, Directories, MORE! Diskette includes 40 new patches and sequencer test-file. Include \$2.50 P&H, and specify monitor type. ISLAND MIDI, PO Box 1102, Bayshore, Long Island, NY 11706.

PATCHES

I love my SQ-80 - wanna trade programs? Sequences? (Via disk.) Even ESQ-1 stuff (tape or disk). Mirage sounds (I can't find original disks #2, #18, #23). Whatever! (I have some Sci-Fi sounds, etc.) L. Benny Sanders, 40 Falstaff Ave., #812, Toronto, ONT Canada M6L-2E1.

Exchange FREE patches on data cassettes and expand your ESQ-1 library. I have a variety of patches to share with hackers interested in swapping for fun, not for profit. Send a cassette (high quality, PLEASE - transferred and VERIFIED) to Mark Curran, GREAT SOUNDS PRODUCTIONS, 13120 Victory Blvd., #6, Van Nuys, CA 91401. Due to the many varieties of sounds available, I cannot correspond on what I have and do not have and what is located on each cassette - but I do promise that for each cassette of patches sent, I will return a set in response. Can exchange on data cassette ONLY.

500 NEW ESQ-1 Super Patches. We've carefully programmed each patch to its full capability that the ESQ-1 has to offer. Only \$19.95/100 Patches (Cassette or Mirage Disk). Putting it simply, we feel that everyone should own our Creative Sounds, 5,000 DX7/IIIFD/DX7/TX Patches. Excellent Sounds. No duplicates. Most formats. \$49.95. 1,024 NEW TX812/FB01/DX100/21/27 Professional Patches. High Quality. No fillers. \$19.95/256 patches. Add \$2.00 P&H. Music World, 617 Panorama Dr., Grand Junction, CO 81503.

ENSONIQ ESQ-1 PATCHES 160 Original, realistic studio quality sounds. NO FACTORY EDITS. Designed for composing, recording, or live performance. Songwriters Series: Volume #1: Pianos, Grands, Steinways, Rhodes, Comp Keyboards, Funk synths, Bases, Fenders, thumbed bases, Fat Brasses, reverbed and echoed synths, Top 40 synths, DX/FM synths, breathtaking woodwinds, rich bell pads, lush voices, Fairlight sound-alikes, crisp violins, violas, cellos, orchestras, percussion & kits, our unique Glassy collection, classical instruments, Techno Pop, sound effects & more. All patches programmed by songwriters & performers for songwriters and performers. Volume #1, 160 patches on data cassette for \$24.95. DEMO CASSETTE for \$5.00, credited toward purchase. Included is information about how to join "THE MONTHLY ESQ-1 SOUNDBANK CLUB." Send check or money order to De Rio Productions, 26 Bradford Ave., Toronto, ONT Canada M8Z-2A3.

I'd like to find anyone to trade ESQ-1 Song Data with; also Disk Data that utilizes both the ESQ-1/Mirage thru MIDI. Call or write: Kevin Muse, P.O. Box 512, Vinita, OK 74301. (918) 256-7060 evenings.

ESQ-1 Owners: VOICE CRYSTAL X, Blank 80-voice RAM cartridge, CRYSTAL CLEAR, for only \$50.00. VOICE CRYSTAL 1, 80-voice E2PROM is DEEP BLUE and filled with 80 voices featuring BANK A; natural instruments: Steinway, tack piano, Rhodes, clav, Taj Mahal flute, trumpet, french horn, bassoon, upright bass, Tomita whistle, fiddle, strings, percussion and... BANK B; electronic instruments: FM piano, FM organ, digital pianos, bell pianos, Moog patches, chorus bass, slap bass, adjustable gated drums/claps. VOICE CRYSTAL 2 is MAGNIFICENT RED featuring BANK A; organs, harmonica, woodwinds, horn section, classical guitar, sitar, bagpipes, steel drum, belltree, cowbell, congas, and... BANK B; studio grand, fusion, fat OBX, electric guitars w/chorus, polymoog, mellow, voice sync, glass bells, bass Moog, techo drumsat. VOICE CRYSTAL 3 is here and it's... MELLOW YELLOW

featuring all new synth, symphonic and new age sounds... only \$63.00 per cartridge. All Voice Crystals are made of transparent high-impact resistant polycarbonate and are FULLY PROGRAMMABLE. DATA CASSETTES available for \$16.00 per bank of 40 voices. Specify Crystal and Bank. Mail check or money order to: EYE AND I PRODUCTIONS, INC., 2151 Old Oakland Rd., #224, San Jose, CA 95131. For COD orders and more info, call (408) 943-0139. We pay shipping for COD orders over \$45.00. We've often found ways to improve our voices and want to share them with our customers, so we also feature VOICE CRYSTAL UPGRADES published in this classified section. Watch for them!

PATCH UPGRADES

VOICE CRYSTAL UPGRADE #5-A4-13
MODEL: VC1
PATCH: +TOMS1
LOCATION: BANK A4
OSC 2: WAVE=KICK
DCA 1: MOD#1=ENV1, DEPTH=00
DCA 2: MOD#1=ENV1, DEPTH=+63; MOD#2=ENV1, DEPTH=+11
FILTER: FREQ=015, Q=00
ENV 1: L1=+50, LV=34, T2=12, T4=00
ENV 3: LV=35
MODE: SYNC=OFF
NOTE: Adds stick to head attack to original patch.

SEQUENCES

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

SERVICES

THE SEQUENCE PREVIEWER... Newsletter highlighting YOUR Sequences... Your listings published each issue. Complete lists sent to buyers. Send SASE for 'PREVIEWER News brief-information. TSP, PO Box 720635, Orlando, FL 32872.

OUT-OF-PRINT BACK ISSUES

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

I would be happy to accommodate requests for copies of no longer available back issues of the Hacker. 5 cents per page plus postage. Pat Finnigan, 4606 E 17th St., Indianapolis, IN 46218. 317-357-3225.

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

FREE CLASSIFIEDS!

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

THE INTERFACE

Letters for The Interface may be sent to any of the following addresses:

U.S. Mail - The Interface, Transoniq Hacker, 1402 SW Upland Dr., Portland, OR 97221

Electronic mail - GEnie Network: TRANSONIQ, CompuServe: 73260,3353, or PAN: TRANSONIQ.

This is probably one of the most open forums in the music industry. Letter writers are asked to please keep the vitriol to a minimum. Readers are reminded to take everything with a grain of salt.

Dear Hacker,

Now that Ensoniq has announced the SQ-80 and many of us have had a chance to see or hear about it, I'm sure there are billions and billions (well, thousands and thousands, at least) of other ESQ-1 owners like myself who are dying to know the answers to the following questions:

1. Does Ensoniq plan to offer a firmware update for the ESQ-1 to give it some of the extra features of the SQ-80 such as second release, more sequence editing capability, etc.?

2. Will there be any way to add the extra waveforms to existing ESQ-1's? Assuming this requires more memory, I suspect that there are many others besides me who would gladly pay some nominal amount to get a factory upgrade, if possible. This would be much easier and presumably a whole lot cheaper than selling our existing ESQ-1's and buying brand new SQ-80's.

If Ensoniq does not plan to offer a waveform expansion upgrade, then perhaps TH can publish an article exploring the possibilities of this for the technically minded.

Anxiously yours,
David J. Ballo
Santa Rosa, CA

[Ensoniq's response - Question 1: We are currently putting the final touches on an ESQ-1 software upgrade that will indeed provide the ESQ-1 owner with many SQ-80 features. Because changing the voice architecture of the ESQ-1 is not feasible at this point in its life cycle, a second release function will not be added as a part of this upgrade. The enhanced sequencing editing functions of the SQ-80, however, will be included in the new software.]

Question 2: Ensoniq has no current plans to provide a "waveform expansion upgrade" as you describe.]

[TH - We're certainly open to printing such an article.]

Dear Hacker,

All three "old hackers" (how old are they?) who wrote of their early impressions of the SQ-80 missed what was, in fact, my second impression.

After I clucked over the keyboard click

for a while (a marketing error guys, even if it is a performance plus - they're usually not turned on when you first walk in the store), I plugged it in, stuck in my ESQ-1 keyboard cartridge, and was immediately struck by how much brighter it sounds. A little adjustment of the filter parameters, and my sounds began to regain their equilibrium, but something still seemed different, as if there were a peak in the response curve. Additionally, much of the grainy digital dirt is gone. At first I thought they might have brightened up the sound in the most troublesome areas to mask the noise - sort of a sweep-under-the-rug solution. But then I tried one of my sounds which had an odd, interesting secondary effect, probably from aliasing, that is completely missing on the SQ-80. A conversation with a non-technical Ensoniq employee confirmed that indeed, the filter is open more, and that some of the dirt has been cleaned up. I also noticed that the oscillator octave parameter now goes all the way to +5, so maybe they raised the sampling rate somehow (oversampling?). What's the story, Ensoniq? I also noticed that the keyboard pressure parameter is quantized - which is clearly audible at high settings for both frequency and filter modulation. At low settings this produces some noise, but I might find some way to mask it.

Yours truly,
Nick Longo
Cesium Sound
Berkeley, CA

[TH - Our three old hackers are old enough to remember the moon landing but probably too young for Sputnik. We did miss the cleaner sound - but it's very definitely there.]

Dear Hacker,

Thanks for the blindingly fast response on my subscription request. I had to write reminder letters to two of the larger mags just to get my first issue of their rags.

Now, before I make a huge mistake, what in hell is an MVI drive? Where does one get it? What does it do? How come this is the first time I've ever heard of one? (Don't answer that last one.) Ensoniq's incestuous MIDI implementation has given me fits with my generic patch librarian. In fact, when I called Ensoniq's customer service, the fellow said that the ESQ didn't respond to "generic system exclusive messages"

in version 1.7 (I now have 2.0 and waiting). What is a generic system exclusive message? Isn't a dump request a dump request? Don't they have all mfr. codes, products codes, etc.? Or was he referring to device inquiry and ID messages? Or was I taking up valuable phone time?

My main question (and maybe Issue 27 is all I need) is, will my current OS allow me to use an MDF-1 or similar drive without drug therapy?

Love your newsletter. I can't believe I've had an ESQ for a year and a half without you.

Sincerely,
Alan K. Davis
Fort Worth, TX

[Ensoniq's response - ESQ-1 software versions 2.1 and higher do allow you to successfully send MIDI data to generic patch librarians and MIDI disk drives such as the MDF-1. A handshaking protocol (found outlined in the ESQ-1 MIDI specifications) that prevented such transfers was eliminated beginning with version 2.1.]

[TH - the disk drive has been mentioned, reviewed, and advertised for some time in these pages. However, shipping of production quantities is a different matter - and possibly one of the reasons you haven't seen or heard too much about them in the rest of the world. Latest word is that they are now shipping.]

Greetings:

Can any of your friends help me with the ESQ Librarian for the C-64 from Music Direct, Inc.? I've written to them and enclosed a stamped, self-addressed postal card for reply but got no answer.

The creators of this software should be justifiably proud of their work, for it is genius. But we all wish people would take greater pride in their endeavors.

My problem is with the directory scroll. Above the scrolling directory are two commands: (punch) #1 to hold, or Pause; and (punch) #3 to stop, or Exit, the directory. That latter command doesn't work for me. The only way to exit the directory is to shut down the computer, reload and start all over, having first written down in pencil the entire directory. I plead there must be an easier way!

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64 Voice RAM w/32 Voices & 32 Blank
Voice Crystal 2-D50 \$110.00
64 Voice RAM w/32 Voices & 32 Blank

EYE AND I Productions, Inc., 2151 Old Oakland Rd., #224
San Jose, CA 95131. PH: (408) 943-0139

I discussed this problem with the salesman who sold me the ESQ-1 because he also reviews software for ELECTRONIC MUSICIAN. He states that the problem must almost surely be in the software. If anybody can help me, I'll write you a thank-you note and reimburse your postage.

Best wishes for continued growth to Transoniq Hacker.

Sincerely,
Bert Evans
Box 6666
Jacksonville, FL 32236

[TH - Sorry, Music Direct, Inc. is new to us. Readers?]

Dear Hacker,

As much as I love my ESQ-1, I have a few gripes about Ensoniq's policies concerning the internal details of their instruments. It seems that the otherwise decent folks at Ensoniq have a mindset similar to Pravda on this accord.

A few months back, I had an idea for an extended cartridge memory system for the ESQ. Since I didn't have an EEPROM cartridge at the time, I wrote Ensoniq and requested a) the pinout of the cartridge port and b) the identity of the EEPROMS used in their cartridges.

After several months, I received a very apologetic letter stating that this information was "proprietary" and could not be furnished. Geez! You would have thought I'd requested the op code so I could build my own or something! So you know what I did? I visited a friend who works at the local Ensoniq dealership, and he allowed me to pry open a cartridge. In about 20 seconds I had my info (by the way, the chip is a Seeq DO52833-250). And with another friend's oscilloscope, I'm gonna get me the pinout timing in about a half hour.

I've never had this sort of problem with Yamaha or Roland or any other synth that I've owned. I think it's ridiculous that Ensoniq insists on keeping such readily available information to itself! C'mon, guys, I don't wanna rip you off, just improve my ESQ-1 to suit my own needs.

Sincerely,
Charles R Fischer
Mescal Music
Hercules, CA

[Ensoniq's response - The points you raise are important ones, and we thank you for giving us the opportunity to state our policies clearly. Our policy regarding dissemination of information is in fact rooted in the rather democratic

Ensoniq philosophy of treating all third party developers equitably.

While you may seek the information for your own purposes only, we can't be assured that other people's intentions are as legitimate. Ensoniq technology is indeed proprietary in nature and we must protect our own interests by carefully limiting the release of sensitive technical materials. We currently do not have the resources to determine on a case by case basis which requests are legitimate and which are not.

The technical documentation that the Ensoniq engineering department has determined suitable for public consumption is included in the Musician's Manual of each product we manufacture. We have found that this information is comprehensive enough to meet most development needs. Many of the most successful Ensoniq third party developers have developed software without any technical assistance from Ensoniq. As you have indicated yourself, the information is readily available to those seriously pursuing development.

It is important to note that providing technical information is only one aspect of developer support. Ensoniq firmly believes in the value of third party development and we nurture this relationship by offering a wide range of marketing support programs for those developers with existing products. Indeed, many of these programs are not offered by our larger competitors.]

[TH - There's also a unique crowd of hackers out there working on the Ensoniq gear. Sometimes a letter or an ad in the Hacker will uncover some surprising leads.]

Dear Editor,

I am the Sysop of MIDlum BBS, a Los Angeles computer bulletin board devoted to MIDI, electronic and computer music. MIDlum supports all computers and electronic musical instruments. We have an extensive file section containing programs, utilities and text files for many different machines, including a few packages for the Mirage.

One unique feature of the board is our sample library for the Mirage. I have written a shareware program, the MIDlum Mirage Librarian, which is available on MIDlum and on many other boards throughout the country. MIDlum currently has several dozen samples in MIDlum Mirage Librarian format available for download, and our library is growing all the time. I'm presently in the process of writing a Mirage Visual Editor which will utilize the MIDlum

Mirage Librarian format and will also be shareware. It should be available in about mid-February.

MIDlum can be reached at (818) 509-8162, (300/1200/2400 baud - N/8/1), 24 hours a day, every day. MIDlum is a free board, open to anyone with an interest in electronic or computer music. Callers can register for the board on-line. There are no "upload/download ratios", except for the Mirage samples which require one sample uploaded to the board for every five samples downloaded. MIDlum is PC-Pursuitable.

I think MIDlum would be of interest to the readers of the Transoniq Hacker, and I would be grateful for any information of MIDlum that you would care to publish.

Thank you for your time and consideration.

Sincerely,
Paul Tauger
N Hollywood, CA

[TH - Thanks for the info. It's particularly timely because of the shutdown of the Beaverton-based BBS (see below). Let us know if you want to be listed in our TRANSONIQ-NET section.]

Dear Transoniq Hacker

Here is another one for your records... It appears that the MACMIDI board Beaverton Digital had has folded. Please get back to me if I am wrong! Keep up the good work with the Hacker, it adds immeasurable value to Ensoniq products!!

Bill Thompson
PAN/ BOSIA::BT3

[TH - MACMIDI board is history.]

Dear Hacker,

I'd like to respond to an issue Rick Hall raised in his review of my (Cesium) sounds. He generates a great deal of copy out of the fact that I only sent 80 sounds for review. As I told Rick initially, this was requested by TH, since, as he touched on, 400 sounds would be a lot to wade through (there are now 640).

On the subject of filler, his suspicion is justified, and I have received complaints from some of the literally hundreds of customers I have spoken to -- complaints about OTHER developers. My policy is not to include any sounds I don't judge to be musically useful. I do include variations of my best sounds, if I

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New and improved! (V1.5) Turn your Mirage into a generic MIDI system exclusive librarian. THE IGUANA allows you to store all your MIDI SysEx data on ordinary Mirage formatted disks. Any type or combination of SysEx data can be recorded. Store up to three 128k files on a disk. Each file can contain up to 99 separate banks of SysEx data. Create and send up to 50 different SysEx request messages. Features include MIDI delay, delete any bank, and the ability to play your patches from the Mirage keyboard, or another keyboard. You will find THE IGUANA out performs all the dedicated MIDI disk drives, which cost hundreds of dollars more! Compared to some similar software for the Mirage, THE IGUANA stands out with more features, it is compatible with more MIDI devices, and it is faster and easier to use. "...worth its weight in gold" KEYBOARD, Jan. '88

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A companion program for THE IGUANA (see above), THE IGUANA JUNIOR is a small version of THE IGUANA plus O.S. 3.d, both incorporated within the normal Mirage operating system environment. It lets you play your Mirage sounds, like normal, but with all the additional features of O.S. 3.d (see above), then at a touch of a button you can send MIDI SysEx data to your instruments. At a touch of a button again, you're back to the normal O.S. 3.d operating system and playing sounds again. Ideal for the performing musician, since you no longer need to boot and re-boot operating systems for different tasks. Requires THE IGUANA to record and store your SysEx data dumps on the same disks as your Mirage sounds. With the additional performance enhancements of O.S. 3.d, no similar operating system offers nearly as much. Includes three banks of new sounds by Steven Fox, including the infamous "10 STORY BUILDING" and "BUBBLIN' BASS".

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judge the variation to have a musically useful difference. This is a feature of all large professional libraries. In fact, I patterned my product on the classic DX7 library DX PRO (the concept, not the sounds). This was marketed by Yamaha, and contains over 700 excellent musical patches, many of which are variations.

The operating principle here is that when one is in the middle of composing, mixing, or rehearsing, it is both time consuming and disruptive to have to stop and re-program a sound, especially if you are new to programming as, I have found, many ESQ-1 owners are. I make no attempt to hide this practice by scrambling the voices around, since their immediate proximity is what actually makes this a valuable feature.

I divide my sounds into categories for people who want only specific sounds, and offer volume discounts, including a half-price special on the whole library. I also now have several compilation cartridges containing selected voices from various combinations of categories. I run an open door establishment, and out of several dozen people who have come to hear the sounds in person, literally 95% have bought some, although one must assume they were predisposed to do so before they came. My best selling format, by far, is the complete library.

Sincerely,
Nick Longo
Cesium Sounds
Berkeley, CA

Gentlemen:

I read with interest the review you ran several issues ago of Monster Dan sequences from Danlar Music, as well as Larry Church's commentary.

I have quite a few Monster Dan sequences (about 50), and having built my entire act around them, I think my comments may be valid and helpful to anyone considering purchasing sequences from Danlar.

From a technical/musical point of view, I have been extremely pleased with the quality and attention to detail. I do perform a fair amount of editing before I put a sequence into my show, but it's more from an aesthetic point - I like changing some of the voicings to suit my personal tastes and to eliminate the need to load new voicings with each sequence.

The strongest advantage I've found with

the Monster Dan sequences is one of practicality. I am a very busy person and do not have the time to sit at my ESQ and program sequences (as much as I would enjoy it). Using the Monster Dan sequences, I've not only gotten the songs I want in my show with a high level of quality, I've also been able to do it quickly and conveniently. By my estimation, these sequences have saved me about six month's worth of tedious work, and now that my basic show is together, updating will be very efficient, allowing me to focus on the more important aspects of the show like performance.

In sum, I would give my strongest recommendation to those considering Danlar/Monster Dan. Their products are first class and well worth the investment.

Sincerely,
Tom Sheehan
Wyomissing, PA

Dear Hacker:

I am a MIDI guitarist and have recently purchased an ESQ-M module for my rig. I would very much appreciate some technical guidance. MIDI guitar is a 'beast' (but it's great - especially when it gives one the opportunity to work with a piece of equipment as amazing as the ESQ-M - I already love it).

I'll briefly describe my rig, and explain the problems with the ESQ-M/GM-70. (Please bear in mind that less than a year ago I had no idea what MIDI was - I have been on incredible learning curve - but as much as I have learned, I have a long way to go). My MIDI rig is as follows:

My controller: Roland GM-70 and GK-1 synth driver W/Gibson Les Paul.

Synth Module: Roland MKS-50.

Synth Module: Yamaha TX-7.

Synth Module: Ensoniq ESQ-M (newest addition)

MIDI thru box, 4 channel mixer, Roland JC-120 AMP, guitar gear, etc...

The following are problems I am experiencing with the ESQ-M:

1. This may be a software problem - I read in the Hacker that came with my ESQ-M that there are some software problems that Ensoniq has found solutions/updates for: 3 programs in the internal memory (010 4XFADE), (020 ECHO1), and (037 +KOTO2) become 'lost' and do not sound. I have reset the memory several times, and then they do sound - for a while... I have checked the parameters several times, and they go

whacky -- eg., DCA ENV 4 goes all the way from 63 to 0, or 23, etc. I have tried resetting DCA ENV 4 to 63 and writing it memory -- I still lose those three sounds. Is it the software, or is there an internal defect in the unit effecting those three memory locations---?? Any suggestions please... Do I need repair of software work...?? (My software is version 1.20 per "hidden functions".)

2. The MIDI modes:

A) GM-70/ESQ-M - In poly mode 'PRESSR' works fine. But there is no 'PRESSR' response in mono mode. (I have shut 'PRESSR' off on ESQ-M for now).

B) Editing of programs in ESQ-M - it seems I have to switch to poly mode, track 0 to edit. In mono mode all I hear while editing is string #6 on track #6, and I must hear a whole chord to edit. Is poly mode the 'edit' mode for me?? Then back to mono mode for performance?? This seems to make sense considering the concept of 'tracks' -- It's not a big deal - I just put the GM-70 in poly mode for the base MIDI channel I'm using for the ESQ-M, change the ESQ-M to poly mode, track 0, and do my editing. Then I set everything back to mono mode, etc... but it would be easier to not have to do all that, if possible... it kind of discourages editing.

3. Bend performance: All 3 modules are much more stable when the GM-70 is in 'chromatic' mode. The ESQ-M seems to be the most difficult in the bending mode - the sounds have a distorted, warbly effect. However, I realize that unstable performance in pitch bend mode is a fact of life.

I love the ESQ-M, and can live easily with these things (a MIDI-guitarist soon learns to be flexible and open, or else one's mental health is in danger)... but if you have any ideas, or technical advice for any of these problems I would very much appreciate it.

I would also like your advice on which of the Ensoniq volumes of sounds on cartridge you would consider of the most value to a MIDI-guitarist. What I do is dig into my sounds, go through the parameters, write up preset program sheets, and thereby learn - then start my own programming...

I hope this letter can be answered - and, I hope it may be of some value to you, because the guitarist as synthesist has a whole bag of problems to deal with that keyboard players don't have to worry about. Many guitarists may not feel it's worth it - but if they haven't experienced

the amazing things that can happen when you turn on to a unit such as the ESQ-M/GM-70, they don't know what they're missing.

My main concern is that I don't have any kind of defect in a chip of on the board, etc.

Thanks for any help/advice/suggestions.

Sincerely,
Gerald Gamins
Wayland, MA

[Ensoniq's response - We have always been committed to the concept of the ESQ-M as a superior guitar synth, so we're glad you have raised these important service and application issues.

Question 1: Our engineering department is unfamiliar with the "whacky" phenomenon you are experiencing but it could be caused by a faulty RAM chip. We have given your name to Steve Coscia, our Customer Service Manager, and he will be in contact with you regarding any potential service problems.

Question 2A: We were successful in

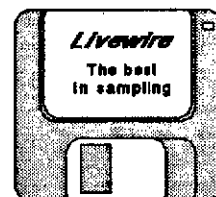
getting the unit to respond to pressure in MONO mode. Make sure that you set both the ESQ-M and the controller to channel pressure.

Question 2B: You can only hear one track (and, thus, one string) at a time when you are in EDIT mode, so your method of setting both the ESQ-M and the controller to POLY mode when you are editing is the best way to go.

Question 3: First make sure that both the controller and the ESQ-M are set to the same bend range. In addition, we have found that using lower value bend ranges (4 or lower) allows for better tracking.]

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Publisher: Eric Geislinger
Editor: Jane Talisman

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Printed in the United States.

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

Subscriptions: 12 monthly issues. US: \$20/year, All others: \$30/year. Payable in US funds.

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