TRANSONIQ HACKER

The Independent News Magazine for Ensoniq Users

SCSI Arrives for the EPS

by Craig Anderton

Recently a friend of mine from Ensoniq, who knows that I've been using the EPS heavily the past few months, asked if I wanted to get a look at their OEX-8 output expander (which had just been released) and SCSI hard disk (which is not yet available as of this writing). Of course I said yes, and figured that dedicated Hacker readers would probably be interested too, so here's the scoop so far.

The OEX-8 output expander adds eight individual outputs to the EPS. (Of course, the two existing outputs can also be used as solo outs by panning signals full left or right.) Each output can carry as little as a single note from a single Wavesample, to polyphony from a complete Instrument. If you think about it (and remember you have 20 voices to spread among those eight outputs), the possibilities are really pretty staggering. (Next stop: more mixer inputs and patch cords - there's no use having eight separate outputs unless you can use them.)

The SCSI port, with its implication of adding a hard disk for ultra-fast data transfer to and from non-volatile storage, is probably the item of greatest interest if for no other reason than for its inherent tech-appeal. Although hard disks are not exactly trouble-free, there is a precedent for using them with music gear; E-mu put a lot of effort into integrating hard disks with their samplers, and the results have been amazingly reliable.

What a hard disk delivers is speed, storage, and convenience. You can store almost 90,000 blocks in a 44 megabyte drive (and over a *quarter million* blocks in a 140 MB drive), and thanks to SCSI (a high-speed computer interface used in the Macintosh and other computers), the load and save times are exceptionally fast. It takes but a few seconds to load an entire disk into memory; with shorter sounds, the data is loaded before you know it.

The basic organizational unit is the *directory*, which can hold up to 38 files. However, any of these files can be a sub-directory, which holds another 38 files, of which any one can be a sub-directory...you get the idea. Suffice it to say you'll run out of memory before you run out of files; basically, any and all files can be directories or sub-directories. This works very much like the way "folders" do on a Macintosh.

Ensoniq has tested the following drives and found them to work with the EPS: Jasmine DirectDrive 45/70, Rodime 60plus and 140plus, General Computer Hyperdrive FX/20, Mass Micro 30, and Microtech 90. If you already have a hard drive for your Mac, don't expect to be able to use it with the EPS as is. The formatting for an EPS and Macintosh drive is completely different, so you can't share a hard drive between an EPS and Mac. You really need to dedicate a drive to the EPS.

Another problem is that no "E-Z-backup" software is complete yet; you'll have to scrupulously back up your floppies. As the manual points out, the hard disk *will* fail and you *will* lose all your work - this is guaranteed. The only question is when the inevitable crash will occur (hopefully later rather than sooner, but flukes can and do

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occur). Having a hard drive makes it easy to be lazy, but if you don't back up your work, you are destined to lose it.

The SCSI software and hardware has not yet been released, so it was buggy (although the main problem was one consistent bug that kept cropping up, not a number of seemingly unrelated ones). I'll assume that by the time the complete product (SCSI interface card, software rev 2.0, and manual) becomes available, the bugs will be mostly out; but I will say the system is, at the very least, usable right now.

I'm excited about adding SCSI to the EPS for two reasons. One, I've been a big Emulator II fan over the years, and have really grown fond of its CD-ROM (although I don't have an E-II hard disk). I pretty much considered the CD-ROM a luxury at first, but being able to load any of thousands of sounds in about 15 seconds is really convenient - no looking around for disks, no waiting for loading, and instant selection. A hard disk provides the same convenience for the EPS, but is faster and unlike a CD-ROM, you can save your own sounds to hard disk.

The other important incentive for getting the Mac and EPS fully tuned in to SCSI hard disks is to take full advantage of Blank Software's *Alchemy* sound editing program. I've always felt that Alchemy was technologically ahead of its time - in other words, its software was designed to a higher level than the hardware it was supposed to serve. Well, the hardware is catching up (if you have the bucks to surf the leading edge). Being able to shoot samples back and forth between Alchemy and the EPS at SCSI rates eliminates that tiresome, maddeningly slow MIDI transfer (hooray), while the hard disk at the EPS end makes EPS loading and saving totally painless. The result is a truly high-speed, high-performance editing and storage system. Figure that even at a system list price around $3,350 ($2,000 for the EPS, $350 for the 2X memory expander, $200 for the SCSI port, and $800 for a typical 45 Megabyte drive) you're getting a lot of convenience for the money.

In the grand scheme of things, the SCSI port takes the EPS one step closer to completion. The manual (still not available) has been a long time coming; the 4X expander is in memory-price limbo; and the "10 Essential Sound Disks" were just released recently. SCSI will of course be a boon to the pros using the EPS, but Ensoniq probably realizes that third party sound developers will be able to go about their tasks far more efficiently if a hard disk is available - and with samplers, the sound library is the key to sales. (Well, at least until people get a bit more adventuresome about doing their own sampling.)

Look for the SCSI retrofit sometime in September for $199.95. I'm impressed; it drastically accelerates the saving and loading process.

Bio: Craig Anderton is the editor-in-chief of Electronic Musician *magazine. He plays with the group Transmitter, produces/mixes albums, and has written several books and hundreds of articles on musical electronics. His series of Classic Synth Disks for the EPS should be available soon.*

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MIDICASTER by Tim Martin

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

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ENSONIQ has asked us to announce that while they are aware that PA Decoder is now advertising a ROM update for the ESQ-1 to add extra waveforms as well as an 8X expander for the EPS, and that while they do welcome these products from the third party developers out there, they also want to caution their customers that the products from PA Decoder have not yet been submitted to ENSONIQ for approval. Until they can approve such products, the customer runs the risk of severely damaging their unit and, of course, voiding their warranty.

This is actually the first that we've heard about these products. We'll have more information as it becomes available.

* * *

EPS (S# 12856) was recently stolen from one of our readers. If you happen upon it please give us a call.

* * *

If your keyboard friends are sponging off your Hacker subscription this is a good time to get them their own subscription for Christmas. We'll even include a note or card if you want (you supply the card).

* * *

If you'd like to see Hackerpatches for the Mirage running Soundprocess, send 'em on in and we'll figure out some way to publish them.

* * *

We'd sure like to see more third-party sound development for the EPS. If you've been toying with the idea of selling samples, this is probably as good a chance as you're going to get to take the plunge.

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HELP WITH QUESTIONS

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

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

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

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

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

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

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

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

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

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

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NEW PRODUCT RELEASES

CYBERSONIQ is releasing an update for the *Synthbank Volume 1.* The current release Version (2.0) will be in the split-disk format only and is being released to ensure compatibility with the Vol. 2 disk. Version (2.0) now uses the Mod Wheel for standard LFO effects with chorusing and wavetable mixing built into the programs. Without the update there would be confusion when using Vol. 1 and 2 sounds together; some sounds would have LFO modulation while others would have chorusing. Other Version 2.0 Updates: (1.) Computer FM waves have been smoothed via computer software for cleaner playback. (2.) Filter Parameters have been modified to reduce aliasing noise. (3.) Wavetables have been shifted around for new combination possibilities using Mixmode. (4.) Sequences 1-3 feature sketch demos for their respective banks. (5.) Several patches feature dynamic wavetable mixing from keyboard velocity. Current Vol. 1 owners can receive the update for a $5 shipping and handling fee by writing to CYBERSONIQ, PO BOX 1771, Madison Square Station, New York, NY, 10159.

Current Ensoniq Operating Systems

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ESQ	3.5		X
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Of Instruments and Layers

by Clark Salisbury

One of the major off-ramps most of us new EPS owners encounter on the road to sampling nirvana is the rather unfamiliar relationship between samples, layers, patches, and instruments. So let's take a look at the basic architecture of an EPS preset - and in the process become more like the gods of sampling we know we all could be.

First, a preset in the EPS is called an "instrument". Many of you will know by now that the EPS can have a total of eight "instruments" on board at any one time. And (of course) you can load a new instrument into memory while you're playing another instrument - the EPS is famous for that little bit.

The confusion, however, springs from the fact that an EPS "instrument" can be much more complex than any of the normal type of synthesizer presets that most of us are familiar with. Way totally much more complex, dude.

First, an EPS "instrument" is composed of layers. Up to eight of 'em. That's right, eight layers of sounds are available within each EPS "instrument". You're probably familiar with some synthesizer or other that allows you to layer a couple of different sounds across the keyboard. Perhaps you'd like to play both strings and piano at the same time - layering allows you to do so. But where most instruments allow you to layer only two sounds on top of each other, the EPS allows you to layer as many as eight different sounds on the keyboard, within a single "instrument". And since you can also layer instruments, you'll find that you can layer as many sounds as you have notes available, which means that up to 20 sounds can be layered on a single key, since the EPS is 20 voice polyphonic. Humma-humma. And that's not even taking into account the fact that you can have multiple split points within each of those layers - but we're getting ahead of ourselves here.

So back to layers. Each layer in the EPS is made up of a group of individual samples - anywhere from 1 to 127 individual samples, to be exact. These samples can be arranged across the keyboard to form the basic instrument sound - perhaps a multi-sampled piano (where a number of notes from a piano are sampled in different ranges to allow for a more accurate representation of the piano sound) or a multi-sampled drum kit (where a number of different samples are taken from different drum and percussion sounds, then arranged across the keyboard), or any other arrangement of samples your bizarre and twisted mind might come up with. Or a layer may not contain any samples at all - just copies of other samples from other layers (which are actually sets of pointers which "point" at other samples). The advantage to this is that you can have layers of samples that have their own processing - tuning, envelopes, stereo panning, etc. - but that take up virtually no memory. Sampling a synthetic waveform and copying it to a bunch of layers can allow you to create a number of synth sounds (a different one for each layer) and might use only a tiny fraction of the EPS's memory.

Anyway, once you have a layer's worth of samples stuffed into the EPS, you will probably want to create a "patch". A patch is simply a grouping of layers. One patch may have layers 1 and 2 active, while another patch may have layers 1,3,5 and 6 active. Patches are accessed (logically enough) by pressing combinations of the two "patch select" buttons located above the mod wheels. Those of you with a binary bent will immediately realize that two patch select buttons will yield a total of four combinations. Hence, each EPS instrument can have up to four patches, which are simply different combinations of the eight layers.

If you want to turn layers on and off, pressing the "EDIT" button, then double-clicking the "INSTRUMENT" button will take you to a display that shows which layers are currently active for the instrument and patch you have selected. From here you can simply use the left/right cursor keys to underline the layer you wish to turn on or off, and use the up/down cursor keys to turn that specific layer on or off. And in this mode, if you watch the window while pressing different combinations of the patch select buttons, you can see which patches activate which layers in whatever instrument you currently have selected.

It all seems simple enough, doesn't it? It's easy to get lost, though, with all these different levels of programming available. For example, you might want to set a key range for a single sample within an instrument - but you could inadvertently be setting the key range for the entire instrument if you don't pay attention to which level you're working with. So just for the record, the hierarchy is this:

1) The most basic level in the EPS is that of the single sample. A sample can have its own processing (envelopes, tuning, panning, etc), its own stereo placement (or separate output, if you are using the audio output expander), and its own key range. A sample (and its processing) is grouped along with other samples (and their processing) into the second level, the layer.

2) The layer can have its own processing, just like a single sample does. Any processing done at the level of the layer will either be added to, or replaced (depending on which you choose), with the processing applied to the individual samples within the layer. Any of the processing available for single samples can be applied to entire layers, with the exception of key range (and, of course, looping, gain normalizing, volume smoothing, sample rate conversion, and a number of other sample-specific types of processing). The layer is then grouped (along with other layers) into the third level, the patch.

3) The patch is simply a collection of one or more layers that are used to make up the final level in the hierarchy, the instrument.

4) All the processing available for single samples is also available at the instrument level (with the exception, of course, of the wavesample-specific types of processing, such as looping, volume smoothing, and so on). In addition, an instrument can be transposed (in either octave and/or semitone increments) by double-clicking on the "Set Keyboard Range" button.

One final cautionary note. When editing at the layer or instrument level, the data slider and the up/down buttons take on slightly different functions than when they are used to edit a single sample. Let's take tuning as an example.

Suppose that you have an instrument made up of two samples - a sample of a tuba on the lower half of the keyboard and a sample of a bagpipe on the upper half. Now let's suppose that the tuba sample is playing a bit flat in relation to the bagpipes sample. Easy enough to fix - simply hit "Edit", make sure that "WS=" is underlined, and play a note of the tuba sample. This, of course, selects the tuba sample for editing. Now

double-click the "Pitch" button - this will take you immediately to the tuning page. Since the tuba is only slightly flat, you'll probably want to underline "Fine=", and then use the slider and up/down buttons to fine tune the tuba sample. All well and good.

Now let's suppose that this entire preset (tuba and bagpipes) turns out to be a shade flat from concert pitch (even though the tuba and bagpipes samples are in tune with each other). Well, it seems like it should be easy enough to fix. Simply press "Edit", underline the instrument name (to select the entire instrument for editing), double-click on the pitch button, and go. Ah, but it's not that easy, MIDI-breath. If you should try to use the data slider to tune the instrument, you'll find that the pitch of both samples will immediately go to whatever value is showing in the display (i.e., the current value) - and this might not necessarily be the value that you want. However, if you use the up/down buttons, the values that you select will either be added to or subtracted from the current values for each of the individual wavesamples. In other words, if the tuba has a fine tune value of -12, and the bagpipes has a value of +6, hitting the up button once will set the tuba to -11, and the bagpipes to +7, while setting the data slider to a value of +7 will cause the tuba sample and the bagpipes to both go to a value of +7. Mercifully, though, hitting the "cancel/no" button will restore all settings to their previous values, giving you an easy way to "back out" if you find you've strayed too far afield. In any case, it's always best to try to be aware of what it is, precisely, that you wish to accomplish when editing at the layer or instrument level.

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 8 years and is now producing his own pop-oriented compositions. His favorite color is chrome.

ESQ Practice Hints

by Chris Barth

Home studios are great, but there's nothing that will improve your playing skills as much as performing with other musicians. If you don't have the time or opportunity to join in with others anymore, why not take advantage of the ESQ-1 sequencer instead? Let's look at a few applications. While this article will focus upon the internal sequencer contained in the ESQ-1, the tips will work with any reasonably equipped sequencer.

One approach is to view the sequencer as a substitute for a live teacher - a rigid substitute with a strict sense of time and no creativity whatsoever. For example, you can start with one of the *Private Lessons* in *Keyboard* magazine (highly recommended). Using the transcription contained in the column, enter it into the sequencer. For most of us, we can play anything if it's slow enough. Just drop the tempo on the sequencer until it's at a speed which lets you enter the piece accurately. This will force you to concentrate on proper fingering without worrying about speed. Enter the left hand part on one sequencer track and enter the right hand part on a different track. By entering the part for each hand on a separate track, you can take advantage of the sequencer's ability to mute individual tracks.

Don't worry if you have trouble loading in the piece, even at a slow tempo. Use your sustain footswitch in the sequencer jack on the back of the synth to create a sequence for the number of measures you need. Then see if you can load in the first few bars correctly, without worrying about the rest. Once you've managed the first few bars (maybe just the first or second, if it's a really tough piece), use the overdub function to punch in the next couple of bars, until you've entered the whole piece.

If you're rehearsing scales and basic lessons like the Hanon exercises for piano, playing along with prerecorded scales and exercises is much more enjoyable than butchering them by yourself. The sequencer ignores all of your mistakes and provides a steady reference point for your timing. And, it sounds a lot better!

Once you've entered the piece into your sequencer, you can now rehearse in a number of different ways: (1) practice the left hand on the "straight synth" (no sequencer track is selected) in unison with the prerecorded left hand sequencer track, increasing the tempo from a crawl to whatever speed you can handle; (2) practice the left hand on the "straight synth" while muting the same prerecorded part on the sequencer; (3) try the preceding using the right hand instead; and (4) practice one hand while alternately playing in unison or solo against the other hand.

The next step is to increase the challenge. Once you've mastered a scale or musical phrase in one key, most jazz piano teachers are going to tell you to play the whole thing one whole tone up and then one down. Of course, this changes most of the proper fingering, and having to read a piece of music in the key of C major while playing it in B major is the sort of final exam you play in some music courses.

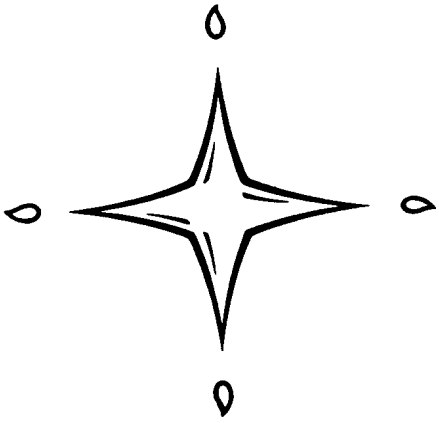
The trick here is to take advantage of the transposition function in your sequencer. On the ESQ, you can transpose tracks individually, or all at once. If your prerecorded practice piece is in the key of A major, and now you want to learn it in A flat major, you'll have to transpose two tracks (the left and right hand parts) separately, each down a step. If your prerecorded part takes up three or more sequencer tracks, you could save the single sequence as a song, and then transpose the song up or down. This would be much faster than transposing lots of individual tracks up or down.

Finally, if you've ever tried to play eighth notes on one hand against triplets on the other, you'll find the whole job much easier playing along with the sequencer. Once you've mastered it, it's yours forever - and the sequencer can usually get you there a lot faster than you can by yourself.

If you've got a drum machine, there's no reason why it shouldn't be keeping a simple beat for you also. It's certainly a lot more fun than playing along with a metronome!

The big advantage to practicing with your sequencer lies in its ability to provide an aural reference which can make learning a new piece much easier. We all know musicians who can learn songs from records but can't learn anything from sheet music. If I have to learn something from paper, I've found it much easier if I can hear it at a proper tempo while I'm practicing it. While nothing beats a good teacher, even the best go home at the end of your lesson. Material you load into your sequencer is available for practice anytime.

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. ■



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RC030127

SQ-80 Essential 1 (VSD-2 disk)

Reviewed by Jim Lammers

For: SQ-80.
Product: Essential 1 (VSD-2 disk).
Price: $19.95.
From: Ensoniq Corporation, 155 Great Valley Parkway, Malvern, PA 19355.

CONTEXT. Taken out of context, the sublime and elegant can seem ridiculous - and vice-versa. The field of musical arrangement bears this out well: sometimes a tacky sound, used sparingly, improves a piece of music. However, when a synthesist judges new sounds, they are usually isolated and out of context, with only a title to suggest the concept of the program. I don't know about other keyboardists, but when I am checking out a new set of voices, (which usually have little more documentation than a list) I look at the title. If it has BS, BAS or BASS in it somewhere, I'm going to try out single notes in the low end of the keyboard. GT or GTR sends me to the pitch bend wheel. That's what the programmer intended, isn't it? If I don't "get" a name (sometimes 6 letters can be so abstract), I play the keyboard like... well, like a piano. Which may or may not be impressive... usually not.

It is probable that in the past, I have dismissed a patch as useless when I misinterpreted the intent of the programmer. Sometimes it may be a case where the programmer had a certain playing technique in mind, or that the MOD wheel should be halfway up. Of course, this is what documentation is all about. But so often, seemingly vital information is left for the customer to figure out. Well, no more. In the land of the SQ-80, there is plenty of disk space for the patch programmer to show us exactly how to use the voice. What better way to show off a bunch of patches, than to put them in a song - in the context that they sound best. Which brings me to these, the first after-purchase patches from Ensoniq exclusively for the SQ-80.

Although the only thing really for sale here are the 40 patches, there are four files on the disk: The "Essential 1" bank (which is what you paid for), the internals (which all SQ-80 owners already have - the SQ defaults to these if its battery power is lost) and two sequencer banks. The first bank contains ten compositions to show off the Essential 1 sounds. The second sequencer bank contains a (as in one) new tune for the internal patches.

When I received the new disk, I went directly to the voices and flipped through them. As usual, it seemed that there were a few standouts and a lot of marginally useful sounds. After I was finished flipping, I started listening to the demo sequences. This time, some of those previously mediocre sounds were now real winners.

Take PROTUS, for instance. When I soloed this voice it sounded like another one of those boring string/accordion-sounding textures that show up in every synth and voice package. Later, during one of the sequences I noticed a wonderful, ominous-sounding low note fade in. One note, very quiet, and very low. But that note with that sound, in the context of the music, raised the song to a higher level.

Another interesting discovery occurred with the patch CYCLOP. This was a bright, obtrusive sound with a pronounced downward filter sweep. At first I thought it was all but unusable. During a demo sequence later, this patch made for a great bass sound when the MOD wheel (which lowered the filter frequency) was brought back enough to tame the obnoxious overtones.

KALMBO, a "plunky" patch, was used to great effect on the fourth demo song - quick, bouncy arpeggios in a kind of African groove. That sequence showed how KALMBO could be used in a novel way. I will definitely be using this patch in the future.

Some sounds were impressive even without the sequences. KLVSTR, an ambient tone that was neither clavinet-ish nor string-ish, is both offbeat and new. SNOGZ is a bright lead sound that also stood out. After a note had mostly died away, applying key pressure brought the volume back up. XMAS, which paired a bell tone with a string envelope, was also interesting.

Almost none of the patches attempt to be imitative, so this is not the place to find a certain instrument you might be needing. Indeed, the majority of the sounds are of the icing-on-the-cake variety. The basic timbre of half of the voices is either bell-like and inharmonic (8) or a breathy tone (12). These are strong, cutting sounds that will dominate in a mix. The other twenty sounds are less intense, but it is unlikely that one would build songs entirely from the patches of Essential 1.

I found the documentation (a folded 11 x 5 card) to be lacking. The card lists the voices, and includes a general statement about the cool effects to be found in key pressure, key velocity, and pedal/wheel controller changes during certain patches. Ensoniq calls these the "hidden capabilities" of a patch, but they are "hidden" only because they did not want to tell us what does what; preferring that we discover them on our own or via the demo sequences. I don't know whether Ensoniq is trying to promote that do-it-yourself spirit, or paper is just too gosh darn expensive for them to document these things. What I would like to see (here comes the sermon) is a page describing each patch, including a photo-reduction of its program sheet, a summary of modulator functions, and a few notes/suggestions from the author (somewhat like the format of the HackerPatch). And why not credit the author of a patch/sequence? Somebody somewhere programmed the patch or composed the sequence. Why do they go nameless?

Thirty six out of the forty patches are represented in the sequences, most of which are long, complex and interesting. The various modulators are used in there too, helping to occupy all but 6K of the SQ-80's 64K internal sequencer memory.

The second sequence (for the internal voices) was interesting, but not the tour de force of the original Demo-A (on VSD-1, included with the SQ-80). It was similar to Demo-B (from the same); an uptempo jazz funk piece that highlighted the brass, violin, and electric guitar sounds. The reason for providing this new sequence was not clear to me. Perhaps these sequences were just laying around the Ensoniq factory, and they stuck 'em on the disk because there was so much unused disk space.

The front of the package also confused me. It says that these voices are "designed exclusively to demonstrate the unique sound making capability of the SQ-80 and ... Cross-Wave Synthesis." Exclusively to demonstrate? What does that mean? Are these patches and sequences to serve as demos for dealers to impress customers with, or are they a kind of

tutorial in patch programming for new SQ-80 owners? I suspect that some marketing person worded that line in a misleading way, so I assume that Ensoniq does consider these patches to be useful, and more than merely a demonstration of capability. Who wants to pay twenty bucks for a demonstration?

In summary, the overall quality of programming is quite good, as one might expect from the creator of these instruments. The patches themselves though, are a bit like spices: strong, but when used sparingly and appropriately, they can dramatically add to your creation. Assuming that you already have most of the meat and potatoes sounds you need, this collection should make a useful addition to your library.

BIO: Jim Lammers is an Anaheim-based Electrical Engineer, transplanted recently from Kansas City. Evenings find him songwriting in his home studio, and weekends find him cruising PCH in his 'vette with the radio blasting, guzzling Dr. Peppers. ■

Valhala's ES1 Librarian

Reviewed by Wayne Dooley

For: ESQ-1 and C-64.
Product: ES1 Patch/Sequence Librarian.
Price: $65 plus $3.50 shipping.
From: Valhala, Box 20157-TH, Ferndale, MI 48220.

For those of us with ESQs and C-64s who wanted to use the latter to manipulate program and sequence data from the former, there was one predominant choice at first; Blank Software's Sound File. Last I heard, Blank abandoned the 64 Sound File, still in a buggy V1.0, and the last of these were left with Dr. T for clearance. In light of this, the ES1 package from Valhala is especially welcome.

General Description

ES1 consists of two separate utilities. The first is a voice program librarian which allows the 64 to hold up to a whopping 12 banks (48K) of programs. The second utility is a 3 bank/sequence librarian. With either utility, data can be sent to or received from the ESQ as well as saved to or loaded from disk. The package is written in very tight machine language, is attractive, and user-friendly enough that a 2-page manual is all that is necessary. Interfaces supported are Sequential, Passport, Dr. T and Syntech. Valhala has upgraded the program at least a few times (I received V4.1), and this is indicative of good customer support. The author mentioned that he thought of also including a patch editor, but this is really unnecessary considering the ESQ's on-board editing capabilities.

An aside to Ensoniq: PLEASE make your updates available to major developers in a timely manner. As I wrote this, there were rumors about compatibility problems between ES1 and ESQ V3.5 software, and with the many ESQ updates, software developers have to deal with any new compatibility problems that arise. My copy of ES1 ran with ESQ V3.5 software, and there were no significant problems. *[Ed. - If you've been following The Interface and Front Panel, you know this has all been cleared up.]*

The 12 Bank Librarian

As mentioned, up to 12 banks of ESQ programs can be loaded into the C-64 individually from disk or ESQ, then saved/transmitted to either. Banks are called up by pressing the corresponding key (A-L) on the 64, and the banks can be given names of up to 15 characters. A maximum of 39 banks (1560 programs) can be saved on a disk. Using a one-program buffer, individual programs can be transmitted to or received from the ESQ. In the latter case, the program can be written from the buffer to any position in banks A-L, allowing you to create customized banks. Unfortunately, it is not possible to load 12 banks in one disk operation. Doubtless this is because of the scant memory remaining after 48K has been reserved for bank data alone, but this time-saving feature would be worth squeezing into a future update.

The 3-Bank/Sequence Librarian

This portion of the package allows the 64 to transmit, receive and save voice banks, single sequences, or all sequence data in a manner similar to that described above. With the bank/sequence utility, a particular bank and sequence (or sequences) meant to be used together can be saved with related names and recalled together, avoiding the "surprises" one gets when loading sequences and having them pointing to unintended voice programs. In addition to the sequence capabilities, up to 3 banks of voice programs can be manipulated. The sequences are handled either one at a time or in bulk, the latter including all song information as well. Cassette users will recognize this as the same procedure used by the ESQ for cassette storage, but the ES1 provides the much greater speed and reliability available from a computer-based system. Since the ESQ doesn't allow you to name sequences (unless you make a one-sequence song), it's nice to be able to do that here.

It's a pity that this is not a patch/sequence/SONG librarian, as the latter capability is missed. One of the ESQ's outstanding features is its ability to chain sequences together into songs, but the ES1 has no provision for dealing with these individually. For example, if you wanted to load up your sequencer with a different set of songs each week for a gig, it would have to be done a sequence at a time. I would have preferred sacrificing a voice bank to provide the extra memory necessary to include song capabilities, but another problem (according to Valhala) was getting the necessary specs from Ensoniq to include this feature.

Warning: Like Sound File, ES1 was designed with the 10,000 note expander in mind. ES1 will work with the 20,000 note expander unless you try to "save all sequences" and more than 32k (half the larger expander's capacity) has been used. I had 43k of data in memory and attempted an all-sequence dump to ES1 and the program crashed.

User Interface

The ES1 package could hardly be easier to use. Most functions are single keypress operations, and are very fast. Even the

speed of the nybble-ized MIDI transfer used by the ESQ is not bad. I appreciate the fact that the keypress approach has been used in favor of the Mac-like one used in Sound File and others (which a former colleague of mine calls the "bonehead" approach), since pressing keys clearly indicated on a screen is quicker and easier than multiple operations with a mouse or joystick. The only real typing involved is for naming banks or sequences, (likewise for mouse driven programs), and if this bothers you, use one character names! One suggested improvement would be a toggle which allows verify (the many Y/N? pauses) to be disabled, for users who become comfortable with ES1.

Disk Operations

Again, ease of use was emphasized here, and most of the operations are executed by pressing function keys on the 64. Banks or sequences can be loaded either from a directory, or the old-fashioned way of typing a file name. Curiously, ES1 saves all files as USR (instead of the usual PRG) files, but otherwise the format is very similar to the one used by Sound File, and files from that program should be easy to convert. A short program for such conversions would be a welcome addition to this package.

I don't have to remind you of the 1541 drive's slow speed, which is a nuisance when transferring the large amounts of ESQ data that can accumulate. Happily, ES1 is compatible with at least some disk accelerators. Fast Load works (if you have a cartridge expander that allows multiple cartridge use, such as the Aprospand), as does Digi-Dos, and presumably similar hardware mods which allow parallel 64-to-1541 communication.

Conclusions

ES1 is an excellent package with only a few shortcomings. The inability to manipulate song files is the main thing that keeps it from being the "ultimate storage program" for this hardware combination. However, it's a terrific value; now that Valhala is doing their own manufacturing, they have been able to lower the price from $99 to the current $65. ES1 proves that even a "dinosaur" like the C-64 can be more than adequate for purposes such as this when the software is intelligently written.

Bio: Wayne Dooley configured, maintained, and taught classes related to the electronic music studio at Shenandoah Conservatory in Winchester, VA. Currently he lives, teaches and writes near Orlando, FL. ▬

ESQ-Tips
All About Modulation

by Jim Johnson

Synthesis is a very complex and esoteric discipline. To become REALLY well versed in it, you need a good understanding of music, acoustics, electronics, and mathematics - and then, you'll be ready to start learning the specific details of all the different instruments that are out there. Fortunately for most musicians, there's no need to become an expert at synthesis in order to coax music out of a synthesizer - factory presets, third party sounds, or sounds you've created on your own through trial and error are just as musically valid as sounds created following days of research and many hours of programming, as long as you can find a good use for each sound. Still, increased understanding of the synthesis methods used by your synth is always helpful, so it's a good idea to learn what all those words that pop up in the ESQ's fluorescent display mean.

One subject that many musicians seem to have problems with is modulation. This is really no surprise, since the term is used in many seemingly unrelated ways, and few manufacturers stress the importance of modulation in their advertising. (When was the last time you heard a synth salesman say "Check out this baby's modulation capabilities"?) In this article, I'll try and shed some light on the mysteries of modulation, and why it's so important in synth programming.

The word "modulate" means "to change", and "modulation" is the act of changing. In synthesizer lingo, the term modulation is used in two ways: first, to describe a relatively slow change in some parameter, and second, as part of the terms "frequency modulation" (abbreviated FM) and "amplitude modulation" (AM), which describe two different methods of combining audio signals to produce complex sounds. While both usages of "modulation" mean the same thing in the strictest physical terms, the musical effects are quite different, so most synthesists use the term "modulation" only when they are describing slow changes, and use the terms "FM" or "AM" to describe the other phenomenon.

So - modulation is changes. If you want to understand why modulation is so important in synthesis, just try and imagine what your synthesizer would sound like if there were no changes in the sound. For a concrete example of this, call up the ESQ-1's BASIC patch (from the original set of factory sounds, if you've still got 'em) and press any key. Hold the key down until you can't stand it any longer. See what I mean? A sound without changes is BORING - it's not musical. No matter what waveshape you use, if it just sits there, it's not musically useful. That's why modulation is the most important element in synthesis. Another example of this is the DX-7, which was the synth that really took synthesis out of the hands of knob-crazy nerds like me and put it in the hands of zillions of piano players. A lot of people think that FM was the DX's big breakthrough, but that's just marketing hype - the real reason was the instrument's velocity and pressure sensitive keyboard, which could be used to modulate many of the parameters of FM synthesis, along with the six envelope generators per voice. If a synth manufacturer had bothered to put those features in an analog synth before Yamaha did it, the history of music in the 80's would have been completely different..... but I digress.

Modulation in a synthesizer (or "sampling synthesizer", like the Mirage) is accomplished with a number of different devices within the synthesizer itself. But rather than discuss all the modulators in the ESQ-1, let's choose a much simpler device, a car, and discuss how modulation is used there. Whereas a synthesizer produces sound as its output, a car produces motion. Sounds can have many different parameters, but motion has only two - speed and direction. The car's steering

wheel modulates direction, and the gas pedal, brakes, clutch, and gear shift are all used to modulate speed. To simplify things even further, let's forget about direction, and let's further assume that the car has no brakes, clutch, or shift, and that the car's speed is directly proportional to how far the gas pedal is depressed. This means that if you press the gas pedal all the way to the floor, the car will instantly jump to its maximum speed, and if you release the pedal, it will immediately stop. (Admittedly, this is a fantasy vehicle, but it's no more outrageous than the "frictionless surface" or the "point sound source" used by physicists when analyzing complex problems.)

This situation - a single modulator controlling a single parameter - is simple enough to illustrate the basic concept of modulation, but it doesn't really say much about how it works in a synthesizer. Since we've already redesigned the automobile to suit our needs, let's imagine that the car has four gas pedals (one for each seat), and that if all four are pressed to the floor, the car will run four times as fast as it would if only one were pressed. Let's further imagine that in the seat beside the driver is a 14 year old with a Walkman playing Def Leppard. Of course, the kid will be tapping his foot to the music, and if that foot is on the gas pedal, the car will speed up and slow down in time to the music. If you reach over and turn the music up, the kid gets more excited, and he pumps his foot harder, which directly affects the speed of the car. If you replace the Def Leppard tape with a Meat Puppets album, his foot will pump faster, and the repetitive "lurch" in the car's motion will be faster.

Now imagine that your grandmother is in the back seat. She's dozing, but any time you shout "Hey, Granny!" she jerks awake for a moment. Her foot is on a gas pedal too, so when you shout, the car's speed shoots way up for an instant, then gradually returns to normal as she calms down and releases the tension in her leg. The fourth gas pedal, which hasn't been used up to this point, is an "unused input", which you can use for whatever purpose you need. For example, if you want a more complex "lurching" motion, you could bring along another kid, perhaps with a rap music tape. In fact, by changing your passenger list, you could tailor the speed modulation functions as needed for each trip.

If you're a truly artistic driver, you'll learn how to coordinate these effects for the greatest benefit. You might shout to Granny if you need an extra burst of speed, perhaps to catch a small animal crossing the road, or you might turn Junior's music up if you need to shake an ax murderer off the roof. (Yes, I know, the analogy is wearing thin, but I'm committed to it now.)

Back to reality. As you may have guessed, each of these elements represents a portion of a synthesizer. Junior would be called an LFO (low frequency oscillator), since he is the source of a repeating signal of varying frequency (speed) and amplitude (volume). Granny is an envelope generator, since she produces a transient signal, or envelope, each time she receives a trigger (your voice). Your own foot represents a keyboard, or perhaps a wheel, foot pedal, or some other manual controller. There are, however, two important differences between the automobile in this example and the synthesizer. First off, the car only has one parameter which can be modulated by the gas pedals (speed), whereas with a synth, several parameters can be modulated simultaneously. If our car were designed like the ESQ-1, you'd be able to use Junior's gas pedal to control the antenna height while he controls the car's speed, or you could re-connect Granny's pedal so that the door locks all pop up when she wakes up. There's no real reason to do this type of thing with a car, of course, but there are lots of good uses for it in synthesis, such as making a sound become a little brighter as it gets louder, or introducing more "growl" in the sound as you play higher notes on the keyboard.

The other important difference is that, with a synthesizer, many of the modulators themselves can be controlled by other modulators. For example, in the ESQ-1, the output level of an LFO can be controlled by any other modulator in the system, and the attack time (T1) and amplitude of the envelopes can be controlled by velocity. This allows you to create very complex changes in the sound, where a change in your performance technique produces a change in the changes in the sound, rather than a simple change.

I realize that I didn't give any concrete examples of how modulation is used in the ESQ-1, or the best ways to use it, but that was not my goal. If you now have a better understanding of what modulation is you'll be better prepared to make use of the material presented in the ESQ-1 Owner's Manual on the subject. Good luck, and happy modulating!

Bio: Jim Johnson, an electrical engineer, has played synths in several Phoenix, AZ bands. He's written for Electronic Musician, KCS, and co-wrote Dr. T's Algorithmic Composer package. He is owner of JAMOS Music, a MIDI programming and consulting firm.

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The Ensoniq EPDM Drum Machine

by Garth Hjelte

I've got an alternative name for my EPS. I call it the EPDM - the Ensoniq Performance Drum Machine. On this instrument Ensoniq has designed in certain features that make it highly desirable for percussion sequencing.

THE SAMPLER

Most basically the EPDM is a 13-bit (A to D) sampler capable of storing 127 waves at a time. With expanded memory, you can access several set-ups at once. One application could be always having drums on board while using the other slots for melodic instruments. Even with the basic memory, there's enough room for a basic kit plus some extras. As far as sampling quality goes, the EPDM has been compared to the likes of the Akai S900 and the Prophet 2000, so that really reflects the kind of drum sounds you'll be able to get. Personally, I'm blown away by the clarity of the machine. Being a former Mirage owner, I really appreciate it.

THE OUTPUT EXPANDER

Although the basic EPDM doesn't offer additional outputs, Ensoniq has offered a unit as an option. Well, $249 isn't that much. Anyway, different processing for each kit-instrument is essential in much of today's music. Common techniques include giving the snare an explosion effect, reverse-gate for the kick, and plenty of stereo spread for the toms and percussion. Or even digital delay on the toms for that "double drummer" effect. The output expander isolates each drum separately so you can specialize effects on each sound. And since the EPDM still keeps the main outs active, you can use the expander just for drums and let the stereo outs handle everything else.

THE SEQUENCER

This is a hot sequencer and very easy to use. You can build songs with 80 different sequences with velocity, polyphonic aftertouch, and all the other usual stuff. But what makes it so hot is the fact that the EPDM was designed with a lot of the special editing features you can only find in PC computer-type sequencers. So for ease of explanation, I'll describe a typical drum-composing session to show how each editing tidbit applies to what you can do.

Take a drum kit instrument (such as Drum Kit 1 or Power Drums) and copy it to about five locations on the instrument panel. The original will serve as the kick track; the second, the snare; third, closed and open hi-hat; fourth, toms; and fifth, cymbals and miscellaneous percussion. Next, play a kick-snare pattern on the kick track. Once that's to your liking, move on to the other tracks besides the snare track (you'll see why in a second) and add the other feature. This loops the sequence while keeping the sequencer on RECORD. This way you can really get into the feel of the track. Once everything is laid down, go back to the kick track and copy its sequence data to the snare track. Now the goal is to erase the kick data from the snare track and the snare data from the kick track. This is done using EDIT KEY RANGE function. It lets you remove any range of note (i.e. MIDI note numbers) out of all or just a portion of a sequence. Simply edit the kick and snare note numbers out of each respective track. One quick suggestion: standardize where you put your drums. In other words, always put kicks in the same octave of the keyboard, snares in the next octave, etc. Just be consistent so you'll always know what to edit when you edit. Put snares close to the kicks, though, because very often you play them in combination.

About quantizing: I usually quantize the kick track or at least part of it to give the pattern some kind of exact reference. Also, I usually treat the snare to the same thing, and then shift clocks forward or backward. Which leads us to the next sub-heading!

SHIFTING CLOCKS

Okay, so what's shifting clocks? Shifting clocks means placing something you've recorded ahead or behind in time where you originally placed it. With my ESQ or even REX (my RX-11), I either taped in my parts or had a drummer play it. Afterwards I usually quantized, mainly because the "live" feel usually seemed so sloppy to me compared to the quantized version. As a result, of course, I paid the price of mechanical-sounding percussion. Consider shifting clocks as a better option. To explain - there's a critical relationship between a kick drum and snare in a rhythm pattern. Given a constant meter dictated by the kick, if the snare is slightly ahead of the beat on a consistent basis, it gives the effect of "driving". If it is consistently behind, it is said to be in the pocket or the groove. Of course, if the effect is exaggerated either way, the music will feel like it's either rushing or dragging.

To simulate this with the EPDM, first record a drum pattern. The only prerequisite is that you put the snare on a separate track. Once you've done that, step to the COMMAND-TRACK page and press forward until you see SHIFT TRACK BY CLOCKS. Press YES (have your OS on hand). It will then ask you which track you want to shift - in our case the snare track, the shift amount (it ranges from + - 48 clocks), and how many bars you want affected. Press YES again, and VIOLA! your track has been shifted.

As you'll find out, just the simple act of moving the snare usually six or seven clocks makes a big difference in a pattern. The machine aspect becomes almost transparent and the feel becomes much more natural.

Although there are many other uses for clock-shifting, the snare-kick relationship is the most immediate and simple application. For more interesting reading, an excellent treatment can be found in an article titled "The Feel Factor", printed in Electronic Musician (Oct '87 pp. 57-65), by Michael Stewart, the guy who came up with the Human Clock (which, just as a matter of record, saved my can on one occasion because my ESQ sync signal failed).

WHEN YOU WISH UPON AN EPDM

The only thing I'd like to see now is alternate quantizing functions. That would go a long way toward "de-exactizing" drum patterns. I'd also like to see someone come out with a MIDI velocity-sensitive fingerpad controller. Playing drums on piano keyboards isn't too much fun.

BIO: Garth Hjelte lives in Seattle and is a partner in Advent Productions, a huge multinational conglomerate specializing in MIDI consultation, production, system design, and potato peeling equipment. He spends most of his time trying to explain to little kids he's not Weird Al.

- And Yet Another Look At Using The EPS As A Drum Machine

by Steven Fox

One of the first things I attempted to sample on my EPS was my Alesis HR-16 drum machine. If you own one of these already, or if you've ever heard it, you know that it has some really cool drum sounds, and Alesis' combination of 16 bit samples at a sample rate of 48k makes it a really hot sounding drum machine.

Now you might be asking, "If you own an HR-16 already, why bother sampling it?". Good question. I suppose I initially wanted to prove to myself just how well the EPS could reproduce the same sounds. By doing so I also learned a few tricks that would apply to any drum machine one might want to sample. I won't be going into detail about how to sample a drum machine in this article since it's essentially the same as sampling any other instrument.

One obvious thing you can do when sampling a drum machine is you can make it indefinitely repeat a single drum sound at a consistent level making it easy to set up levels and sampling rates. Record a pattern with just a single strike of the drum sound you want to sample and start the drum machine in pattern mode. Adjust the tempo so you have a good amount of space between each strike and you're all set.

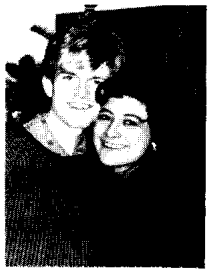
After making some samples I discovered that besides being able to adjust the panning and level of each drum sound (which can already be done with the drum machine) the EPS allows you to process the sounds in a number of new ways. There's pitch bend, micro tuning, LFO's to modulate - just about anything. Try radically different amplitude envelopes, filter envelopes, pitch envelopes. Crossfade sounds, stack sounds, or randomly pan them. Try using attack velocity to add varying amounts of pitch change to each new note. The possibilities are endless.

But before I really explored any of these tricks, I wanted to make the EPS simulate the drum machine exactly. And this is where I came across a problem. My drum machine, like many other drum machines, has three special pads which cut one another off. These pads are normally assigned to the hi-hat sounds because when you play a closed hi-hat you normally want to cut off an open hi-hat sound. Otherwise you would have two different hi-hat sounds playing at the same time, which results in some pretty ungroovy lines.

What I needed was a keyboard mono mode, like the Mirage has. But since the EPS doesn't exactly have this, I instead tried playing with the amplitude envelopes, which only resulted in getting hi-hats that cut off all the time whether another hi-hat followed or not. Finally, I came up with a solution.

First, I copied just the four hi-hat samples (closed, half open, open, foot closed) to a new layer, in this case LAYER 2. Then, editing LAYER 2 only, I changed the LAYER GLIDEMODE from OFF to PEDAL. I also made sure the LAYER GLIDETIME=0 and LEGATO LAYER=2. Now, when playing the keyboard, since only the hi-hat samples in LAYER 2 were affected by the edit, all the drums could play simultaneously, and as long as I kept the sustain pedal depressed, the hi-hat samples would cut one another off, just like the drum machine. Now I can play all those groovy hi-hat lines just like on my drum machine. And as an added bonus, playing with the sustain pedal depressed makes multiple cymbal crashes play over one another just like the HR-16 does.

In the end I think I will still use the drum machine itself rather than the EPS sampled version, at least as long as I still have the HR-16. But my friends who don't have one love these samples. And, of course, these same techniques can be applied when sampling other drum machines. Anyone got an '808?



BIO: Steven Fox is 23, programs software as a hobby and then sells it to make a living. He still is looking for a proper job, although that offer off the coast of Africa did sound tempting. Any more offers???

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Visions of Hot Air
Using the Yamaha WX7 with the Ensoniq Mirage

by Philip Rosine

Since synthesizers and samplers first appeared it has probably been every horn player's dream to be able to get in on the action. Not all of us will admit it, but we've been dreaming. Some of us even broke down and acquired some rudimentary keyboard skills just to try it out. Sampling instruments like the Mirage gave us better (read "more realistic") sounds than we could get from straight synthesis, but the feel just wasn't there. The total involvement of body and soul that you get from a wind instrument never seems to happen with a keyboard. Well, sports fans and gentle readers, the time has come. You closet horn players can join the electronic revolution.

Actually, wind synths have been around for a while, but not within reach of the average musician. The breakthrough is that Yamaha recently introduced the WX7 MIDI Wind Controller. Unlike the Lyricon and other electronic instruments for wind players, the WX7 does not produce any sound of its own. It must be connected to a MIDI sound source to be usable. Of course, since it was invented by Yamaha it works exceptionally well with some of the Yamaha synths, but it is also a marvelous device when attached to other instruments such as the Mirage. And there is something poetic about using the Mirage with a wind controller: mirages are caused by hot air.

The WX7 looks a lot like a clarinet designed by a cubist painter. It is a quality instrument, and comes with its own hard case and MIDI cables. Visually it is very interesting, but obviously not a traditional instrument. The mouthpiece and fingering are very much like a saxophone, but the machine is both easier and harder to play than a sax. The mouthpiece has a plastic "reed" which allows pitch bends under lip control, but does not require the technique of a true woodwind since there is no sound produced by the "reed". In other words, it is not possible to squeak and squawk. The fingering is almost identical to a sax with two exceptions: there are alternate fingerings for notes which allow almost two octaves to be played without using the octave shift keys, and there are five (!) octave keys. The overall range of the instrument is 103 notes -- over 7 octaves, more than the range of the standard Mirage. The WX7 will hold notes so you can play chords, and it will transmit on two MIDI channels (1 & 2, or 3 & 4) so you can control several MIDI instruments. I suggest you see your Yamaha dealer for more information.

There have been a number of letters in the Hacker about how to make the WX7 work with the Mirage, and I am going to attempt to blow away (pun intended) some of the fog. First off, let's admit that the Mirage was not designed to be used with a wind controller. However, that doesn't prevent it being used with one. In fact, it works amazingly well. There are two ways to go about it:

1) You can use Ensoniq OS 3.2 and use the WX7 to send key velocity information, playing the Mirage much like a keyboard.

2) You can get the Super-MIDI OS disk from Creative Concepts and play the Mirage directly as a wind instrument. Both of these techniques work, but the second has some real advantages.

Using OS 3.2

The standard Mirage operating system (OS 3.2) allows the amplitude envelope to be controlled only through key velocity and key release sensitivity. The WX7 cannot provide release data, but it can send key velocity data based upon how hard you blow into the WX7. If the voice you wish to play on the Mirage is velocity sensitive it will react to the WX7. The Mirage will also allow breath control information to act as the LFO modulation source (parameter #78) and as the mix modulation source (parameter #79).

I find that using OS 3.2 well takes some practice since a note's amplitude is only sensitive to the pressure of the breath at the instant of being played. You cannot "swell" a note; in order to increase the volume you must reattack the note. Getting a loud attack on a note requires very accurate tonguing, and may take some practice. If you slur a phrase, you can increase or decrease the volume of succeeding notes with ease, but cleanly articulated phrases are more difficult. Using OS 3.2 is most effective for percussive (piano, drums, etc.) or plucked (bass, violin) voices. It does not (to me) sound very realistic for traditional wind voices.

To use a breath controller for LFO or mix modulation, you must set the appropriate parameters (#78 and/or #79) to 02. The current setting is probably 01, which is the mod wheel. Using the WX7 to control the LFO or the mix modulation may be effective for some voices, but I find it extremely difficult to control. You cannot effectively control both volume and LFO (or mix) at the same time. In addition, my opinion is that these parameters must be used judiciously and with care, thus limiting the usefulness of these controls with the WX7.

Super-MIDI OS

I personally prefer to use Dick Lord's Super-MIDI operating system for playing the Mirage and the WX7. Super-MIDI allows you to select the MIDI device you wish to control volume on the Mirage. You can set different devices for the upper and lower programs, which can be useful if you have a keyboard sequence in one program which needs to play while you use the WX7 for the voice in the other program.

The instructions with the Super-MIDI disk are pretty good, but here are some details. For use with the WX7 you want to have MIDI device 02, the breath controller, handle MIDI volume. After you boot from the Super-MIDI disk parameter #76 handles the lower program volume and #77 the upper program volume. If you intend to use the WX7 on both halves, enter 76 and press the value key. The display will read 07, the standard main volume controller (the keyboard). Use the down arrow to change the parameter value to 02. Repeat this for parameter #77. Now when you play the WX7 the volume of the voice will follow your breath very much like a "real" wind instrument.

You may wish to save these settings on your Super-MIDI disk. To do so, take the disk out and switch the write protect off (the little hole should be closed). Then enter 14 (save configuration parameters) on the keypad; the display will flash SP; press enter. The disk will run for a second, and the parameters are saved. Switch the write protect back on for the disk.

Program Changes

The WX7 allows the player to select five different programs using keys on the controller. With the Mirage this means loading different voices from the disk. The following table defines what happens when you select programs 1-5 from the WX7:

Program	Mirage Action
1	Load upper/lower sound 1, program 1
2	Load upper/lower sound 2, program 1
3	Load upper/lower sound 3, program 1
4	Load upper/lower sound 1, program 2
5	Load upper/lower sound 2, program 2

As you can see, you may need to rearrange you sounds and programs to build disks containing the correct items for loading using the WX7. Remember, for live performance, it's going to take some time to load.

You may wish to set the Mirage to not respond to program changes, particularly if you work with other synths and want to send program changes while playing. Parameter #84 sets this, but some of the Mirage user's manuals do not describe this parameter correctly (it was a change with OS 3.2). It sets the type of MIDI data the Mirage will recognize. The values for parameter #84 are as follows:

```
01  Note On/Off.
02  plus Mod Wheel & valid controller changes.
03  plus Program Changes.
04  Program Changes only if followed by MIDI <yes>.
```

The default setting is 03, so you may wish to change it. This can be saved using #14, Save Configuration Parameters.

Performance Notes

I like to layer sounds using the Mirage with other synths. The WX7 will transmit on two MIDI channels (either 1 & 2, or 3 & 4), and can hold notes on the second channel (2 or 4) while playing a lead line on the other channel (1 or 2). This is a lot of fun, but takes some care to get all the MIDI parameters set correctly. You must have OMNI mode set OFF (parameter #81), and the instrument set to the correct MIDI channel (parameter #82). Note that the Mirage is set to OMNI ON when it powers up, so you will have to set parameter #81 each time you turn the machine on.

When working with other synths, you need to remember that the standard keyboard Mirage only plays 61 of the 128 possible MIDI notes. The WX7 will play 103 notes. What the Mirage does is duplicate the upper and lower octaves when it receives notes outside its range, i.e, as you play down the scale with the WX7, the lowest octave will repeat, and the same for the highest octave as you play up the scale. Other synths may not do this. This should not cause any real problems; it's just that the harmony shifts by an octave.

Getting your attack correct with the WX7 takes some time. There are two curves of breath to volume ratio available on the WX. I find that the exponential response curve works best for me (setup switch #7 ON). You may need to experiment with this. Some experimentation is also needed to set the wind and lip sensors properly. Once you get these things set to your satisfaction, the settings seem to work well with all synths (at least the ones I've tried).

Have fun and happy tooting. I will be happy to attempt to answer questions about the WX7 and the Mirage. I can't claim to have tried everything or to have all the answers, but I'm always willing to attempt some new tricks.

Bio: Philip Rosine is "by nature an iconoclast, by training a Forester and Software Engineer, by vocation a Programmer/ Analyst, and only by avocation a musician." He's been doing music longer than the others (except for the iconoclast part), and currently has a Mirage, a DX100, a TX81Z, and assorted other toys in his studio (living room) where he is also known to play an occasional "real instrument" like the sax or flute. ■

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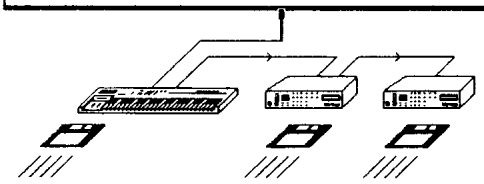

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THE LUSH DISK

New sounds for the SoundProcess Operating System for the Mirage

Reviewed by Steven Fox

FOR: Mirage and SoundProcess.
PRODUCT: The Lush Disk.
PRICE: $15.00.
FROM: Bob Spencer, #11 Warren Dr., Granite Falls, NC 28630.

I'm trying to figure out how to classify this disk. For example, a small list of developers you read about in the Hacker might include Triton, Leaping Lizards, Upward Concepts, Valhala, and Cesium. While they all produce different types of products for a variety of Ensoniq keyboards, they all are classified as "third-party developers".

Now take Bob "Lush" Spencer's new disk, the Lush Disk. This disk includes 122 new patches for the SoundProcess operating system. Since SoundProcess is a "third-party" product, does this make the Lush Disk a "fourth-party" product? I'm not sure, but I think it might be. Whatever you want to call it, this unassuming little disk is certainly worth mentioning.

The Lush Disk consists of three files full of new waves and wavesamples for the SoundProcess operating system. If you are unfamiliar with SoundProcess, it essentially turns your Mirage into a synthesizer, giving you four oscillators per voice (unlike two with the normal Mirage, or three with an ESQ or SQ-80), multi-timbral control over all 16 MIDI channels, and unlike the ROM waveforms in the ESQ or SQ-80, you can load in new waves and wavesamples from disk to create completely new sounds.

The three files, named "TOP 40", "FUSION", and "ORCHETHNA" each come complete with 48 new patches and 32 new programs. Compare that to Triton's own Sound Disk #1 which comes with only two files, one with only 30 programs and the other with only five.

The sounds themselves are pretty good. I particularly like the basses and organs. Most of the waves and wavesamples are Bob's own samples, while a few are "borrowed" from familiar Ensoniq Mirage factory disks. I would argue that there is a place for both original samples as well as borrowed samples on SoundProcess sound disks. Often times I WANT to use a familiar sound with SoundProcess that otherwise is only available in the usual Ensoniq 3.2 format. It's nice to already have some of my favorite Mirage sounds converted over to SoundProcess, rather than do it myself.

The patch parameters on many of these sounds could still use a bit of work, in particular the filter settings on some are set too high or too low causing distortion and aliasing. This was due to the fact that the patches were originally programmed on an old unmodified Mirage with the old filters. This apparently has already been taken care of since Bob has now announced a revised version with the filter settings for the newer Mirages.

I found only three programs on the entire disk that I didn't like at all. While about a third of the programs I didn't find particularly exciting or useful for my own particular tastes, the other two thirds or so I found quite inspiring. Several of the programs demonstrated some of the unique features of SoundProcess which I had never heard before.

The documentation consists of only a couple photocopied pages describing each of the 32 programs. Many of the names could be described as esoteric; seemingly having no relation to the actual sound, although some are quite amusing, "CLAVICLE", "EGG BASS - HAM & ORGAN", "LOUNGE LIZARD". Several of the program names also give you tips on how to best use the particular sound in performance. The only thing I missed is a chart describing all the waves and wavesamples, such as Triton has done.

Overall, the amount of good, new sounds you get on this disk is well worth the 15 bucks. It's obvious that Bob Spencer has put a lot of work into this disk. He's already got a whole new disk planned for release shortly. But even with just this one I've got enough good sounds to keep me happy for a while.

AUTHORS BIO: Steven Fox is 23, and besides watching tv, he is the main guy at Leaping Lizards. He has also just finished constructing his latest electronic invention, a device which will shortly be sucking a couple hundred dollars from the wallets and gold cards of yuppies all across the country.

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Don't Ignore Your Mirage Sequencer!

By Ernie Mansfield

From reading about all the new computer-synthesizers coming out daily, promising to be better, faster, and cheaper than anything else, it is easy to get the notion that what you have bought (i.e., your Mirage) is now half-obsolete, and therefore you start ignoring it; keeping it in the far corner of your studio, dreaming and wishing for more and more brand-new shiny products.

Most musicians I talk to, even owners of the Mirage, are not even aware that the Mirage can do some pretty serious sequencing. Even Ensoniq will tell you that it is a "scratch pad." I think it is a shame for people not to use their sequencer simply because someone has told them that it is a mere "scratch pad," especially if it is the only sequencer they own, and they are not ready or willing to shell out several hundred dollars for more equipment. I am here to tell you that the Mirage sequencer, while not nearly as sophisticated as many other sequencers, can be used for some serious musical projects, can be used professionally, and can save you time and money. I have used it professionally in performance and in recording, so I know of what I speak.

First of all, however, you must go out and buy the Sequencer Expander. At $70 (maybe less, discounted), it allows you 1,333 events instead of a mere 333 events. How long is 1,333 events? Well, if you don't use the mod wheel or pitch bend, you can play 1,333 notes. If you are in 4/4 time playing quarter notes, you can play a bass line 333 measures long. Or, if you play in four-part harmony, you can enter about 83 measures. Of course, you will never be playing all quarter notes, four-part harmony, and compositions that are exactly 83 bars long. But you can reasonably assume that you can enter 64 measures of a simple accompaniment. A typical "standard" tune is 32 bars, so you can essentially enter two choruses of a standard tune.

But wait! If you loop your sequence, you will have an infinitely long 32 bar song which you can solo over on another instrument, or even solo on the Mirage, which is live during playback. Now, each time you hit "play", your sequence will start over again from the beginning. You can add a four- or eight-bar introduction to your piece simply by playing the first few bars of your sequence, and, at the proper time, hitting the "Play" button.

Since my main instruments are the flute and sax, I often perform with groups or at least with a pianist or guitarist, but I have often had the desire to perform solo, accompanying myself. In fact, sometimes, on a low-budget gig, this is a necessity. Besides the obvious advantages, you are also afforded the opportunity to play in many different musical styles and utilize many different instrument sounds. Here's where your next purchase enters in: before you can prepare your sequences and sounds, go out and buy a formatting diskette and a good supply of blank disks. The Sequence Expander only allows you three sequences per disk. Other optional, but desirable, equipment includes the standard Mirage footswitch, a metronome or rhythm machine, and/or an echo unit. The footswitch will allow you to start and stop your sequence without using your hands (set Parameter 89, Sustain Pedal/Footswitch Select, to ON); the metronome or rhythm machine will help you keep time when you are entering your sequence. The echo unit, set to a "slapback" effect, can be very useful for setting up a rhythmic effect.

If you have a rhythm machine with either MIDI or a Sync Output, you are fortunate in that you can use the clock from your rhythm unit to control the sequencer. This would be the best way to go, since most rhythm units will have better quantization (i.e., automatically adjusting your playing to be "in time"). To do this, however, you will need to set Parameter 85 to ON (External Clock) and Param. 86 (ON if using Sync Jack, Off if using MIDI In Jack). You will also need to consult you rhythm unit's manual; as with all MIDI hookups, there may be some tweaking involved.

Let's say you are a vocalist or instrumentalist and you would like to use the Mirage as your accompanist while you perform. Here's what you do. Let's use a standard blues for in "C", with an intro and ending:

BLUES

INTRO

|| C / / / | F / / / | C / / / | C7 (rest rest rest) ||

SONG:

||: C / / / | F / / / | C / / / | C7 / / / |

| F / / / | F / / / | C / / / | C / / / |

(1st & 2nd endings)

| G7 / / / | F / / / | C / / / | G7 / / / :||

FINAL ENDING:

| C C7 F Fm | G7 / C (rest) ||

With your sequencer expander inserted and disks formatted (see instructions that come with each), select a bass sound in the lower keyboard and a piano sound in the upper keyboard, then save these sounds on your formatted disk as Sound #1. Now we're ready to enter our bass part. Start your rhythmic device (listed above), or tap your foot as best you can, and follow this procedure:

1) Press REC button.

2) Press REC button a second time. Now we are on standby. Now the first note we hit will begin the recording process, so be sure you give yourself a count-off and hit the first note on the beat!

3) Play a bass part for the entire Blues progression above, starting from SONG:, taking the first and second repeats, then taking the FINAL ENDING.

4) After the FINAL ENDING, keep counting, and on what would be the next downbeat, hit PLAY. You have just recorded your Blues bass part, and now it should be playing back. (If it does not, check to see that Param. 88, Sequencer Loop Switch, is ON.) If it is not perfect, re-do it to your liking.

5) Press Save Sequence, #2, Enter. You have now saved your bass part on your formatted disk. Now you are ready to overdub.

6) Press REC.

7) Press PLAY. Now your bass part is playing back, and you can overdub your piano part. At this point you will have to turn off your rhythm unit, unless it is MIDI'd to the sequencer clock. Interestingly enough, you can still use your echo unit, since it is always echoing your output signal.

8) When you have overdubbed to your satisfaction, press Save Sequence, #1, Enter. You have now saved your two-track sequence, along with your piano and bass patches, all on #1 of your formatted disk. Should you want to re-do your overdubs, you can still load Sequence #2, your original bass part, or you can record over it.

Now that you have your Blues recorded, you can add your INTRO (shown above) simply by playing the first four bars of the sequence, pressing Stop after beat 1 of bar four, and then pressing Play on the downbeat of the next measure. This actually works best with the foot pedal, which stops the sequence on the first press, then re-starts it on the second press. You can add more song choruses simply by re-pressing Play or the foot pedal right after the 1st or 2nd endings. You can also speed up or slow down your song by using the arrow keys, even using a rapid slow-down to zero for a sort-of held-note cadence at the end. If you own Upward Concepts' Multi-Temperament disk you can transpose your song to any key, or even invert it. Warning: DO NOT use the mod or pitch wheels, as they will eat up your sequenced events!

I hope I have interested some of you in using your neglected mirage sequencer. It's true, the sequencer clock sometimes seems erratic, and it is hard to keep good time without external help; however, some kinds of music, like space music and ballads, may even benefit by this somewhat "rubato" effect. Besides, if enough of us persist, perhaps someone will come up with a new software/hardware update providing even more capabilities for this sequencer.

Bio.: Ernie Mansfield is a musician/composer living in the San Francisco Bay area. Twice he has won National Endowment for the Arts awards for jazz performance. As a music transcriber and copyist, he has worked for many composers, including Terry Riley, John Adams, Gunther Schuller, Herbie Hancock, and McCoy Tyner. As a composer and flutist he can be heard on "Windsailor" and "ColorDrops", on Catero/Blackhawk Records. His entirely Mirage-sequenced compositions may be heard as background on a yoga-meditation tape, "Body Praise", distributed by Center for Growth/Wholeness. For more information, contact Music-Graphics, P.O. Box 737, Berkeley, Ca. 94701. ▬

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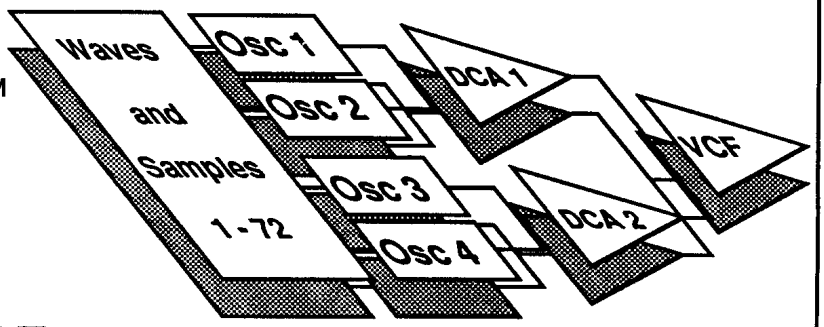

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Hackerpatch

By Sam Mims

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

The Patch: PSYNTH

By Philip Cook, Ruston, LA

This sound has a delayed echo effect. Turning on the AM or SYNC modes can provide some interesting effects.

The Hack

This is a pleasant synth patch, but I'm not a big fan of the echo effect as it is. The echo is created by ENV 3 controlling the filter. First of all, I don't like having TK=09; this parameter changes the value of T2 depending on how high up the keyboard one plays, and in this patch it means the echo delay changes accordingly. Try hitting the lowest and highest notes on the keyboard simultaneously to see what I mean. So I set this to 00 for an even delay. The echo was too long and too pronounced for my taste, so I changed T2 to 24 (this is the delay time) and L3 to +24 (the echo amount) for a very subtle effect. The effect is not a true echo, as would be achieved with a digital delay, since the sound stays at the echo level (L3) until the key is released. It's a nice effect just the same.

If you want to leave off the echo, change L2 of ENV 4 to +41. This sounds a bit abrupt though, so smooth the attack some by changing T1 to 19 or so. It's fun at this point to play with the filter resonance (Q) as well.

Back to Philip's original sound, turning the SYNC on makes a very subtle difference, but switching on the AM makes a nice synth brass sound. This latter variation could be made pretty punchy with a quick bit of envelope manipulation.

The Patch: DUAL

by Michael A. Duhaime, Softworx MIDI Systems

Adjusting LV of ENV 1 can give you more dynamic velocity with this patch. Adjust it to suit your taste. Velocity controls the panning modulation, but you may want to change this parameter to suit your specific application.

The Hack

This is sort of a DX-ish digital piano sound. Following the attack "chiff" created by OSC 3 set to NOISE 1, the electric piano sound swells louder a bit. I wasn't crazy about such a noticeable swell, so I changed L2 on ENV 4 to +54. This led to a further problem of the sound sustaining too loudly, so I changed L3 on that envelope to +39. I'm sure that Michael had something different in mind when he created this patch, but it sounded so close to a particular DX patch that I couldn't resist trying to get it even closer.

Changing the waveform of OSC 3 can change the "chiff" on the attack into a high bell. It's interesting that this happens no matter what waveform you change it to, other than the NOISE waves or KICK. All the other choices lead to the same effect with only subtle variations because the OCTAVE is set to +3, adding the sound of OSC 3 in like a high harmonic.

The Patch: DLCMR1

Tom McCaffrey, SoundBank

DLCMR1 is a hammer dulcimer sound specific to the SQ-80. Now you can bring your SQ-80 to the Philadelphia Folk Festival and not feel left out. The sound uses the PLUCK waveform for the hammer attack, and VOICE 1 waves for the decay.

The Hack

This is a pretty nice sound, but - as Tom mentions - it's pretty hard to adapt it to the ESQ-1. It works well on the SQ-80 though, and shouldn't be restricted just to folk music. You may prefer using the PIANO waveform on OSC 1 and 3, rather than VOICE 1. To me, it sounds more like a vibrating string this way. I also turned down the release time a bit by changing T4 on the ENV 4 page to 29R.

Without the PLUCK waveform, the ESQ just doesn't duplicate this patch. But you can get a nice sound - just not as realistic - by using BASS or BASS 2 for the OSC 2 waveform. Also on the ESQ you won't get the effect of LFO 2's vibrato unless you play the ESQ from a pressure-sensitive keyboard. The ESQ responds to pressure via MIDI, but the keys themselves do not transmit it.

The Patch: TOMS-1

By Preston Connick, Music Bank

The Hack

This is a great Simmons tom sound from Music Bank's Songwriter Series 1. The sound is big and powerful and beats any other imitation I've heard to date. OSC 1 uses a sine wave which slides down in frequency - due to ENV 2 modulating it - to add the classic Simmons flavor. OSC 2 and 3 add the punch that makes the sound really slam. The patch is very realistic on the bottom octaves of the keyboard.

If you DO want to get a bit less punch and more of an electronic drum, try changing the waveform of OSC 3 to NOISE 1 or NOISE 3. Changing this to KICK makes for an interesting variation, but one that is unrealistic. Is that good or bad? Turning on the AM on the MODES page produces a very unpleasant imitation of certain bodily functions.

Bio: Sam Mims is a performing musician and a member of the LA band MESSENGER. He owns Syntaur Productions, a company that has produced music for TV and radio, commercials, planetarium shows, and films. He plans to market synth patches for the ESQ-1 and Mirage samples.

ESQ-1 PROG: PSYNTH

BY: PHILIP COOK

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	12	SQR	OFF	-	LFO1	3
OSC 2	-1	0	8	SQR	OFF	-	LFO2	3
OSC 3	-1	0	4	SQR	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	56	ON	OFF	-	OFF	-
DCA 2	56	ON	OFF	-	OFF	-
DCA 3	56	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	0	0	38	ENV3	48	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	LFO1	3

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	31	OFF	OFF	TRI	11	0	11	OFF
LFO 2	24	OFF	OFF	TRI	11	0	11	OFF
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	63	10	41	8	0	0	39	0	39	9
ENV 4	41	53	47	0	0	0	0	0	39	9

	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
OFF	-	OFF	-	OFF	-	-

ESQ-1 PROG: DUAL

BY MICHAEL DUHAIME

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	EL PNO	LFO1	1	OFF	-
OSC 2	-1	0	3	EL PNO	LFO1	-2	OFF	-
OSC 3	3	0	0	NOISE1	VEL	32	LFO1	1

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	0	ON	ENV1	63	OFF	-
DCA 2	0	ON	ENV1	63	OFF	-
DCA 3	0	ON	ENV2	63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	48	5	52	KBD	-63	VEL	19

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	VEL	-23

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	31	OFF	ON	TRI	0	0	16	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	46	57	56	0	0	4	0	0	33	9
ENV 2	63	0	0	0	0	0	37	0	29	9
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	63	39	63	20	0	0	15	37	55	0

	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
OFF	-	OFF	-	OFF	-	-

SQ-80 PROG: DLCMR1

BY: TOM MCCAFFREY

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	0	0	0	VOICE1	LFO1	4	LFO2	3
OSC 2	0	0	3	PLUCK	LFO1	4	LFO2	3
OSC 3	0	0	1	VOICE1	LFO1	4	LFO2	3

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

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	78	0	23	ENV3	27	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	KBD2	47

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	23	OFF	ON	TRI	0	1	20	WHEEL
LFO 2	27	OFF	OFF	TRI	0	0	0	PRESS
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	62	45	17	0	22	3	11	63	37	9
ENV 4	63	62	0	10L	1	0	6	49	35R	22

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

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

ESQ-1 PROG: TOMS-1

BY: PRESTON CONNICK

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	4	4	SINE	ENV2	48	ENV4	-28
OSC 2	-1	0	0	KICK	ENV4	-50	OFF	-
OSC 3	3	0	0	NOISE2	ENV2	48	KBD2	-63

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	35	ON	ENV2	32	KBD2	4
DCA 2	0	ON	ENV1	63	OFF	-
DCA 3	0	ON	ENV3	63	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	26	2	0	ENV2	63	KBD2	-2

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	10	KBD2	40

	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	63	0	0	0	0	0	18	0	0	45
ENV 2	60	-63	0	0	0	0	36	0	63	20
ENV 3	63	0	0	0	0	0	8	0	0	9
ENV 4	63	63	56	0	0	0	20	12	23	11

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

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

Classifieds

USER GROUPS

Forming New Brunswick, NJ area EPS-ESQ-1 users group. If interested, call Manny, 201-390-8537.

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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 TH,

In the last Interface there was a "please help" letter addressed to me from Jeri Ray, Mount Juliet, TN. I contacted Jeri, and after qualifying the problem we learned that the MIDI in her ESQ-1 worked fine when it wasn't hooked up to the Commodore 64. This led me to believe the problem was someplace other than the ESQ-1. Jeri mentioned that she was going to purchase an IBM PC in the near future, so we agreed to wait and see what results that would yield. We contacted Jeri after she received the IBM PC. Everything is OK.

Sincerely,
Steve Coscia
Ensoniq Corp.

Dear TH,

I have a problem I hope you can help me with. I own a Mirage and ESQ-1 and am experiencing a serious low hum (around 200 Hz, if I had to guess) when connecting either or both keyboards to my Peavey CS-1200 amplifier. I have tried all sorts of mild to heavy shielded cables. I have tried grounding both keyboards to each other and to the amplifier. I have tried putting everything on an EMI/RFI surge suppressor, also a voltage regulator. I have also tried connecting a hi-to-low impedance transformer to the output of both keyboards and plugging in through an XLR/CANON low impedance connector to the amp. For a while I was thinking that the problem may have been in my amp, cables or electrical outlet(s) but when that same cable is plugged into any of my other keyboards or drum machines, that hum disappears and all is well. I called Ensoniq about it and they told me that they don't know of any such problems. The volume on both the keyboard and the amp have been readjusted in just about all manners, but any time I push more than 300 watts, that hum fiercely appears. I have also tried a loaner from my dealer. The problem is in theirs, too.

The same setup when connected to my DX-7 works great with even twice the output volume. By the way, that problem also appears when connecting either equipment to my 4 track cassette recorder, but just not as bad. Do you know of any fixes?

Pierre H. Kerbage
Mission, KS

[TH - If you can put a scope on it and determine that it really is 200 Hz (and not 60 or 120), then all the futzing with the power lines and grounding isn't going to do anything. (Unless, of course, somebody's injecting 200 Hz into your line. Check that too.) Sure sounds like something's goofy in some part or circuit that's common to both instruments.]

[Ensoniq's response - You need to determine if the sound is a 60 Hz or 120 Hz hum induced by grounding. Because of UL and FCC requirements, the grounding scheme we use is quite complex and can lead to ground loop hum in improper system configurations.

Attach only one keyboard and don't attach any other cables except power and audio, then experiment with ground lifting either or both the amp or the keyboard. If the hum goes away, you must have a grounding problem and will need to determine the proper configuration which doesn't induce hum.]

Dear Transoniq Hacker:

I am writing for one basic reason. I want to make the SQ-80 owners of the world aware of my experience with the 1000plus voices offered by Fred's Music Shop. I hope it will save them time and money. I intended on going through the disk and taking out the very finest sounds for my own use. I did this, but with much disappointment.

I found only 32 excellent sounds. Approximately one-half of those are beyond excellent and make me believe I am playing a far more advanced instrument. Unfortunately, this leaves just around 1000 throwaway voices!

I am not being overly picky by any means. I've been a musician for about 18 years. I've played all styles of music. I own a modest set-up including a Mirage, Matrix 6, Roland 106, Mac plus with Opcode sequencer and now the awesome SQ-80.

If anyone is interested in and needs a wide variety of sounds it is me! This is not an overly subjective review. I have played many of the unuseful sounds for other musicians - they agree.

There is a great deal of repetition in Soundbank. For example, they took the same bass sound and with very MINOR tweaks gave it a new name under the pretense of a useful variation. Then, this same basic patch is repeated over and over again. Each one of these repetitions is then given a new name. To me, this defines the term "filler". The SQ-80 is not a toy and that's what it sounds like with this disk!

Several other patches generated no sound or a barely audible click or bleep. Of course, they had impressive sounding names.

I understand completely that almost any sound can, at some point, be conceivably useful in some sound mix. This seems to be the premise the disk was built upon. I do not define "a musical sound" as something merely audible from the output of my keyboard.

Needless to say, I totally and adamantly disagree with Patrice DeVicentis' review of Soundbank in the August issue. However, she did make a good point that the banks are well organized into groups and this does save time. I hope the Hacker won't dismiss this as being too biased or vitriolic. The fact of the matter is that I only want to make everyone aware that what has been advertised as a 1000 voices is not what you might expect for your hard earned money.

Don't let Freddie Boy laugh all the way to the Soundbank...

Sincerely,
Trent Gardner
Vacaville, CA

[TH - Additional opinions are ALWAYS welcome. (This is particularly useful in response to reviewers who are new and unfamiliar to our readers.) Thirty-two excellent patches out of a possible 1000 sounds sure doesn't sound too good. However, if you look at it as 32 great sounds for $1.25 each and the rest is just extra stuff it's not a bad deal. (If you don't mind a little hunting...)]

Dear Hacker:

I have recently discovered a problem with my ESQ-1 that some of your readers may be interested in or may even have a solution for. Ensoniq's response to this problem was particularly annoying, but more on that later. Now on to the problem...

My ESQ-1 has version 2.3 of the operating system. I am using it in a live performance situation where I am required to play a bass part simultaneously with various other string/horn/electric piano parts. So I thought I would split the keyboard for all the various sounds with the bass sound. Furthermore, I wanted the bass to come out the left channel and go directly to my amp, while all the other sounds are assigned to the right channel and go through a volume pedal on their way to the amp. I tried to accomplish this by panning the bass sound all the way to left and all the other sounds all the way to right. (The volume pedal gives much more control over certain solo-voice lines that occur in the right-hand parts.) To demonstrate the problem I am having, you can try the standard BLPMO patch panned all the way right layered with the PIANO2 patch panned all the way left. Set the panning modulation to *OFF* in both cases.

Now for the problem. With the patches mentioned above and the ESQ connected in stereo, there is a crosstalk problem between the two channels. This is not just a stereo separation issue, but rather a transient signal routing problem. A VERY DISPLEASING popping sound can be heard in the left channel output when playing the right-hand voices, something which clearly SHOULD NOT OCCUR. It does not happen on the same notes every time, and indeed some notes will intermittently display the symptom. It is most noticeable when the sound on the right channel has a strong attack. It's almost as if the microprocessor inside the ESQ doesn't properly make the left/right channel assignment before starting to produce the sound. (If you noodle around a bit with the right hand only, it might not show up until you start playing both hands at once.)

For my usage, these transients in the left channel are TOTALLY unacceptable because I am not using a volume pedal on that channel and the transients are about as loud as the bass sound that is SUPPOSED to be center and use the left/mono output, thus giving up

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some of the volume control for the solo right-hand voices. Increasing the velocity sensitivity of ENV4 helps a little in most cases, but it's still not as useful as a separate volume control would be.

Now for Ensoniq's response to the problem. First I went back to the store where I bought the ESQ. They were helpful, but they had never noticed this problem. Anyway, they didn't design the thing, so I didn't really expect them to have a solution for what seemed to be a software/hardware design flaw. I also tried it on the ESQ running version 3.5 of the operating system, but with the same results.

Next I called Ensoniq's customer service number. The person I talked to, whose name I didn't get, knew about the behavior I was describing within about 30 seconds of our conversation (indicating to me that I'm not the first to report this). THEN HE HAD THE NERVE TO TELL ME IT "WASN'T A PROBLEM". Just what DOES constitute a problem with these guys? Does the unit have to be unplayable, because let me tell you, it IS unplayable in this configuration. Since it is not performing up to spec, an effort should be made to fix the problem or at least acknowledge its existence as a known bug. (Where in the ESQ-1 manual does it say "By the way, don't pan sounds hard left or right, because this creates ugly crosstalk transients."?)

The workaround suggested to me on the phone was to reduce the panning by moving all the voices towards the stereo center somewhat, which did reduce the transients, but also made it useless to use separate outputs in my application. Having experience myself in programming real-time operating systems, I can accept the fact that this problem might be insolvable if Ensoniq has run out of PROM space or if an oversight was made when designing the hardware. I certainly don't expect them to field-upgrade all existing units. But to simply say "It's not a problem, therefore we don't have to fix it" is a truckload of bulls__t.

Interestingly, Mr. Ensoniq also said that the problem should not occur on the SQ-80, "because the SQ-80 has true stereo outputs". Translation: "stereo on the ESQ-1 is a kludge, but we did it right the second time around".

I have one final point, having to do with what I will call the "all-notes-off" controversy and Ensoniq's response to it. One of the really powerful features of any computerized system is its configurability by the END USER. This means we the people who bought the thing. There should be no technical reason why the recognition and transmission of the MIDI "all notes off" message can not be an option on the master menu page. If it would take more menu pages, who cares? It's not like you're going to be changing it every day.

It's unfortunate that I couldn't get a satisfactory answer from Ensoniq about this matter, because I am genuinely pleased with the product, and could even recommend it.

Graham Doig
Troy, NY

[Ensoniq's response - Unfortunately, you misunderstood the intention of the panning circuitry. It was never intended or designed to create separate outputs. The voltage-controlled panners in the voice chips used in the ESQ-1 and SQ-80 do not have sufficient channel separation to avoid cross-talk and inherently produce control feed-through transients when switched rapidly from one extreme to the another.

There is nothing that can be done about this as we have no control over the manufacture of the voice chips. They were not designed to do what you are trying to do, nor have we ever said that they could.

The SQ-80 is identical to the ESQ-1, but the EPS allows this function at the expense of dynamic panning which is available on the ESQ-1/SQ-80.

There is not enough memory to allow the ALL NOTES OFF message to be used as an option. Because we've had so many calls having to do with Roland gear concerning this, we aren't likely to resurrect the situation again.]

Dear Hacker:

I'm on my second year of your great magazine. Keep up the good work.

I have a question for Ensoniq: Are there any plans in the near or distant future to produce a rack-mount ROM sample player loaded with those great Mirage factory sounds? With the introduction of VLSI chips to the marketplace, getting these sounds into a unit as described would be a fairly easy task for the techno-wizards at Ensoniq.

And let face it - even with the plethora of 3rd party Mirage sounds that are available - the factory sounds still will beat the others hands down.

Thank you,
David Detling
Pensacola, Fla.

[Ensoniq's response - Unfortunately, the cost of masked ROMS is very high and would not allow us to produce a cost-effective product. The biggest ROMs available would still only hold four MIRAGE sounds.]

Hello again,

I have another question for Ensoniq in regard to SQ-80 functions. It appears that although it is possible to load patch data via cassette from an '80 into an ESQ-1 (if only ESQ waveforms are used) a number of us have discovered that this is not the case with sequence information. Because of that lovely disk drive in the SQ, there is no need for a "tape out"... unless you intend to send information to an ESQ-1. I'm sure that what the problem is, is that even with no information in seq 31-60 and songs 11-20, that it is looking for some place to put the "non-information" from the SQ (non-seq and non-songs). Is it possible to filter out that information? Will it be the same for Mirage dumps if that is implemented?

Something else to consider. While there is a "Remove Controllers" function on the TRACK page, is it possible to put one on the SEQ page? I am forever triggering the after pressure on patches where it makes no

difference (except to eat up memory).

One more thing, has anyone considered a custom wake-up message for the SQ (or any of the keyboards). One that says "THIS SQ-80 PROPERTY OF... " It would be worth it for me to pay an extra whatever. It would have to be registered to serial numbers with a card to mail in if the equipment was sold to someone else but it would sure be likely to "catch the thief". Thanks for your attention.

Sincerely,
L. Benny Sanders
Toronto, Canada

[Ensoniq's response - It isn't possible to filter out the type of information that you're referring to.

With a "Remove Controllers" function on the TRACK page, it isn't necessary to put one on the SEQ page. Simply remove controllers from each track of the sequence.

There isn't enough memory available in the SQ-80 for a custom wake-up message. Besides, it could always be cleared out by reinitializing the unit.]

Dear TH,

Your mag just keeps getting better, so here's a check for my subscription renewal. The reviews (both positive and negative) and the large letters section are great! How about doing a periodic summary index of product reviews, and maybe a summary of what products are available for which synths and computers? (For instance, what are my choices of ESQ-1 patch editors/librarians for an IBM PC alone?)

In the July '88 issue, Steve Hodak asked a question about an acoustic sound analysis article. I recommend "A Synthesist's Guide to Acoustic Instruments" by Howard Massey. (Amsco Publications) You can order it through the Mix Bookshelf. Just check out Electronic Musician magazine. It includes descriptions of various instrument sounds, frequency and FFT plots, and synth patches for subtractive (analog) synths, phase distortion (C2) synths, digital FM (DX7), and tips for sampling. This is an excellent book. Another distributor for the book is: Music Sales Corporation, 24 East 22 Street, New York, NY 10010.

Keep up the great work!
Bob Bockstahler
Encinitas, CA

[TH - Bob, your periodic summary index idea sounds promising (if it's short!). If you're interested in doing it, how about you give us a call and we'll hack out the details.]

Dear Transoniq Hacker,

After years of having to settle for owning only cheap "toy" keyboards while being a starving graduate student, I am now the delighted owner of the synth of my dreams, the SQ-80. I had been lusting after the DX7 for many years, but when I had my first demo of the ESQ-1 last year at a local music shop, the object of my desires abruptly changed. When the SQ-80 arrived I could wait no longer and have been passionately involved since I brought her home. (Forgive my bent metaphors - I'm a psychologist sex therapist and university sex educator.) I receive a large number of professional journals and publications, but look forward to receiving none of them each month nearly as much as I do your excellent technical magazine. I read each issue cover-to-cover and, in true techno-freak style, now am nourishing a new fantasy of adopting an EPS so SQ-80 has someone nice to talk to while I compose my New Age brain-dead music.

Even though I feel like I've almost memorized the SQ-80 musician's manual, I have two questions. Please explain the limitation on the number of voices that can be played before "voice stealing" (that annoying clipping of sounds) occurs! Is the limitation the number of keys pressed simultaneously, or the number of different waveforms accessed by OSC 1,2, and 3, or something else? I know it has nothing to do with the number of tracks since I sometimes get voice-stealing while attempting to enter a third or fourth track.

Finally, I've found the track mix page to be virtually useless. Using the CV pedal or data entry slide, (or even a single volume setting change at the beginning of the track sequence) either on straight playback or audition playback, the edit is not remembered even though I respond "yes" to the "program change" prompt. My dealer expert is stymied and the manual is sparse on this subject. Am I attempting a post-mix that is beyond the SQ-80 capacity, or am I doing it wrong?

Robert Hatfield, Ph.D.
Cincinnati, OH

[Ensoniq's response - The voice limitation has to do with the number of notes being played (whether by the sequencer or the keyboard). If more than eight notes are playing at any given moment, voices (notes) will be stolen. Keep in mind that sounds with long release times may still be "on" even if you can't hear them and could result in other voices being stolen. Also, layering programs uses two voices per note and will reduce the number of notes that can be played before voice stealing occurs.

Volume changes during a sequence can only be created using the volume pedal while recording (set PEDAL=VOL on the MASTER page). A static mix can always be set during playback. You must then stop the sequencer, select a new sequence, and answer YES to the "Save Changes" prompt.]

Dear Hacker,

I'd like to respond to Steve Munro's letter in which he criticizes mine and some other vendors' ESQ-1 patch libraries. I find his remarks disturbing, mostly because having just announced six new volumes of sounds to my previous customers, I've been getting calls and letters literally every day, seven days a week, telling me how much they like my work, and to please keep at it. This has happened before when I released new sounds. If it hadn't, I wouldn't have stayed in this business, because I'm certainly not getting rich at it.

I have also gotten a handful of negative calls. I guess you can't please everyone.

I've heard all but one of the other libraries

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Steve mentions, and talked to all but two of their designers personally. The sounds he dislikes so strongly are the ones I like best, and are also the ones I know took the most time and effort to program. One of the libraries he recommends was, I was told by the programmer, done in its entirety in two hours. One of your reviewers, Chris Barth, raved about these sounds. Although I really do think that on some level these things are extremely subjective, I would also say Steve's taste is questionable, as are some critics'. Still, on some level, everyone's opinion is valuable. That is what democracy, "free enterprise", and the Hacker are all about.

As to drums and acoustic instruments, no, they are not my best sounds, Steve, not by far. However, that is because the ESQ-1 has an analog style voice architecture, albeit with a nice acoustic piano waveform. Generally, if you want very realistic acoustic instruments, you should use real acoustic instruments. Even sampled sounds, to my ears, do not even approximate real solo strings and woodwinds, for example - saxes especially. I also recommend to people looking for realistic drum sounds that they buy a drum machine or an SQ-80. The drums I have are good only as temporary substitutes, or for layering, or adding variety to sampled drum parts. I would recommend the Alesis HR16 as an excellent low cost drum machine. Oh, and while we're giving out free advertising, Al Goldberg of Still Voice Audio wrote in a while back accusing me of responding to a review in order to get free advertising, so now you don't have to write again, Al.

Sincerely,
Nick Longo
Cesium Sound
Berkeley, CA

Dear Hackers,

Now here's a request. I'd love to see an article on how to build an Input Sampling Filter for the Mirage DSK. It doesn't seem like it should be that hard to do (from what I understand, it's just an LPF with a very steep cutoff). I just don't have the expertise to design it myself. I'm sure there are many more DSK owners who'd benefit from such a project.

Anyway, thanks for all the info you've delivered over the years - the Hacker is worth its weight in gold.

Yours,
Charles Blaum
Sound of Glass Studio
West Boylston, MA

[Ensoniq's response - The DSK was not designed to accept our Input Sampling Filter due to an overwhelming lack of interest by customers. Since the ISF had programmable cut-off frequencies, it would be quite complicated to work it into the DSK.]

[TH - Well, we're certainly open to publishing this if someone else wants to tackle what sounds like a fairly difficult task for a fairly small market.]

Dear Hacker,

Polyphonic kudos to a great and getting greater newsletter. Polytimbral congratulations to Ensoniq for the outstanding EPS. Poly...oh, never mind.

There is just one little thing that bugs me on the EPS. The other day I tried hooking my EPS and a controller, as well as some other synths up to my new MIDI patch bay/processor. I wanted to merge the EPS output with the controller output, do a little MIDI processing and then distribute it all back out to the synths and the EPS. Sounds like a fairly reasonable thing to do in this MIDI processing day and age. But...if the EPS is set to "SEND KEYS TO MIDI" it won't receive!?!

I have confirmed this with Ensoniq. That's the way it's supposed to be! The EPS has such wonderful controller features, it sure would be nice if I could use them to their maximum potential AND use the sampler at the same time.

Can enough of us get together to change Ensoniq's mind?

While we are at it, how about these suggestions:

- A SCSI port on the 2x
- A rack expander (even if it's just more instrument buttons and/or voices)
- A global transpose function
- Allow MIDI send channel to default to the instrument number
- A disk backup utility
- A manual
- A two-for-one sale
- Jobs for my kids

Now that the nits have been picked, I do feel that no matter how I've got the send mode selected it should not effect the way it receives MIDI data. P-l-e-a-s-e change that, Ensoniq. But, even if you don't, thanks for making it easy to "Buy American".

Third generation Ensoniq user,
Pete Iverson
Boise, Idaho

[Ensoniq's response - It is true that if the EPS is set to "SEND KEYS TO MIDI", it will not receive data. Our software writers are currently reviewing this situation, so we may have more information about this in the near future.

A 2X with SCSI is now available in the form of the ME-1A. This is a 2X expander (now available at your local dealers for $349.95) that leaves the option open for a SCSI kit to be installed. The kit must be installed by an ENSONIQ Authorized Service Facility ($199.00 for parts and installation).

If you have sent in your warranty card, you will be receiving your Advanced Applications Guide along with the nine new sound disks shortly.

We thank you for your suggestions as these always play a major part in future product development as well as the updating of current products.]

Dear Transoniq Hacker,

I would like to thank Rick Parent and Ensoniq for the clinic at Louisiana Tech University in the fall of last year. Luckily, my Dad, who teaches at LA Tech, agreed to check me out

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of high school to see it. The clinic was incredible! It made me decide to buy an ESQ-1.

Thanks for the great mag. I don't know what I'd do without it.

P.S. Would anyone like to trade patches or sequences for the ESQ-1 in conjunction with an Alesis DR-16?

Philip Cook
2805 Belcara
Ruston, LA 71270

[Ensoniq's response - We thank you and Rick thanks you.]

Dear Hackers,

Having just finished repairing my Mirage DSK (one of the older ones) I thought that I'd write in and spare some owners some grief. I've had a Mirage for about three years now and it's been down about five times. Each time the symptoms have been a blank display, the keyboard infinitely sustaining, a garbled sound, a random sequence that won't stop, and/or a hum.

At first, because of the hum, I thought the transformer was bad so I had my local music store replace it under warranty. Well, everything was OK for about two months. This time I had my music store send the Mirage back to Ensoniq and I think they must have replaced the power supply and motherboard. That fix was good for about three months. Since it was still under warranty I took it back to the store. Whatever they did got it through its warranty period but shortly after it went down a fourth time.

So, it was time to make a decision; either I fixed it myself or I used it for a boat anchor. Since I didn't have a boat I decided to open the thing up and put my Electrical Engineering degree to use. I pulled the power supply out and checked it with a voltmeter. Everything looked OK. Because of the motherboard design, I stopped at that point and decided to put it back together and send it in for the last time.

After I got it together I turned it on in disgust. The problem was gone. What I had not checked were the connectors. I opened the case up and looked for signs at a back connection and I found it. The connector from the transformer to the power supply was not only warm to the touch (unusual) but had also showed signs of discoloration (turning brown) around one of the pins. I removed the connector, cleaned up the pins on the power supply with a fine file and bent the pin slightly to give it a better connection.

My fix was good for about a year and a half. I didn't really expect to have any more problems but the other night our keyboard player started complaining about the Mirage distorting. Cool, calm, and collected I went to work. I cleaned the pins up enough to get us through practice.

After practice, however, I decided to go back into the Mirage and fix it once and for all. I removed the same connector (from the transformer to power supply) and removed each of the sliding contacts from the connector plastic housing. Using a fine file I cleaned up all of the slides and bent them out to give better springing action. There's a little tab under the slide which I also bent out to reinforce the slide itself. I then cleaned up the pins on the power supply and straightened up the ones I had purposely bent before. Everything works great now.

A couple of notes before you try this yourself. One of the signs of a bad connection on the power supply connector is a slight hum. You can feel the vibration by putting your hand on the Mirage emblem on the case. The hum, however might not always be present; it depends on how bad the connection is. Another thing, don't be afraid to try to fix it yourself but unplug your power cord before doing so. Also avoid coming in contact with the motherboard and when you're filing use a super fine contact file or super fine emory cloth and file very lightly. Don't get the wires on the connector mixed up - do them one at a time. And make sure you plug in the connector right when you're finished; you can easily shift it one pin over if you're not careful.

Happy hacking,
Stephen Popielarczyk
Beaumont, TX

[Ensoniq's response - The connectors on all of our products are plated to prevent corrosion. Sometimes there are flaws in the plating which over time and depending on the environment (humidity, smoke, etc.) can allow the contacts to corrode and degrade the connection. It is preferable to clean the contacts with a solvent rather than filing them as this can remove even more of the plating.]

Not that dear Hacker,

Something is wrong but maybe it is not your fault. I took my subscription in August 1987 and received issue number 26. I then received the next 9 issues in the first week of each month (that makes 10). As I was ready to renew for another year (I do love your newsletter), something different occurred: the June issue was not arriving. Everyday I waited for the mailman (remember that old Beatle song). It finally arrived June 22 with a British postmark and little note on page 3.

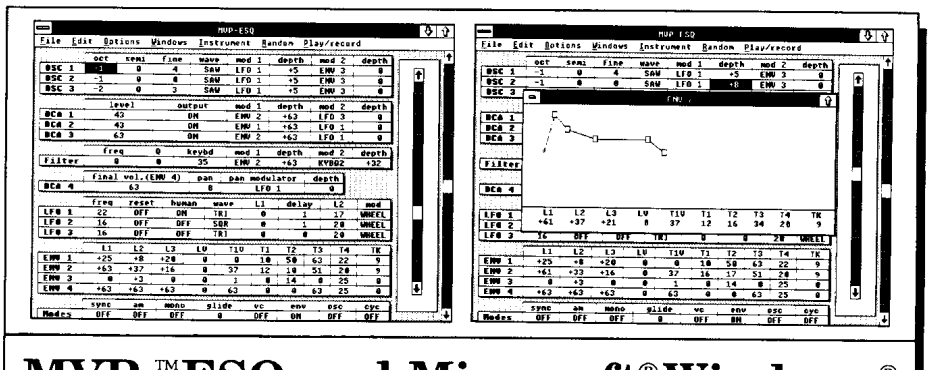
Today is August 3 and I still haven't received the July issue which would be the twelveth. As I write this letter, 2 questions arise:

1. Will I ever get that 12th issue?
2. Should I renew my subscription?

I still love my ESQ and I still need food for Him!

Marc Laveaux
Repentigny, Quebec

[TH - Well, the little note on page 3 of the June issue explained "why" and "what happened." I hope you saw the little note on page 3 of last month's issue. We're now offering a "First Class Option" for Canadians. We don't like this anymore than you do - but with postal monopolies, what can you do? (And, of course you should renew.)]



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SPECTRUMS to look for in the future: Korg M1, Kawai K1, Casio FZ1...get on our mailing list

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Dear Hacker,

I am a professional musician. I bought an EPS that I use on the job and I'm very happy with it.

Recently at one of my gigs, a client who is into computers told me that a floppy disk with the capacity to hold 2 Meg of information has been developed. Is there a chance this will help the EPS owners who wish to get more sounds on one disk?

P.S. Enjoy your magazine - keep up the great work!

George Finizio
Redlands, CA

[TH - There's a lot of different mass storage methods and devices out there and more being developed. (We're waiting for the price to drop on the 10 Meg floppy drive just out for the Atari 520ST.) But, it's not the disk - it's the drive. Ensoniq would have to change the drive on the EPS. Right now, the most cost-effective way to gain access to mass storage devices is to do just what they did - put a SCSI port on it. Then you can use industry-standard hardware (even the 10 Meg floppy just mentioned). Keep watching that port! (Check out Craig's article in this issue.) We'll cover more on this in future issues.]

[Ensoniq's response - It would be impossible to retrofit this drive into the EPS as the built-in floppy disk controller would not be able to handle it. SCSI is the best bet.]

Hi Hackers,

Where is Operating System 3.5 for the ESQ-1? In Finland, we still have 2.0!

Thanks for your great mag.

Pekka
Suvinen, Finland

[Ensoniq's response - OS 3.5 has been available in the U.S. since the beginning of April of this year. Contact ENSONIQ Europe (Phone 03465-69664) for more information.]

Dear Transoniq Hacker

Since the responsibilities of our new business (Danlar Music) have calmed down a bit, I'd like to share some information with our fellow Hackers. In the last year or two, I have accumulated some tips on dealing with ESQ specific sequencing problems like pitch wheel glitches, note robbing and timing errors. These pests have become part of my life so some hints might be appreciated by those who haven't been fumbling with them full-time as I have.

Before Larry and I became thoroughly familiar with these problems, some of the more subtle glitches got shipped. They didn't bother us much at the time, but it resulted in a less than perfect product. Customer feedback called our attention to some rough spots; and in every case, we have made corrections and updated our files. This process has increased our level of expectation in a quest for perfection, and we thank everyone who has contributed. If any of our users have unsolved problems you haven't discussed with Larry, you should call in so we can deal with them immediately. Chances are, we already have the fix and you just didn't get a copy. Or there may be some user error. Someone called in just today reporting to Larry that I had programmed some drum parts that were really busy and cluttered up the mix. Turns out he had his drum machine in OMNI mode so it was responding to keyboard and bass notes showing up on channel 1 (due to the default status settings of those tracks). Technician Larry is available to help with these types of problems.

When musicians call in for the first time wondering just what this Monster Dan stuff is all about, they frequently ask "does is it sound just like the record?" Imitating a big budget production on a single, inexpensive synthesizer has some definite limitations; but our goal is to program the arrangement just like the record. Many artists' recordings have parts that are difficult to distinguish; and frequently, the arrangement calls for more than eight voices - so many compromises must be made. For reasons too numerous to mention here, the arrangement and/or mix that sounds fine on the record is not necessarily going to produce the optimum results on the bandstand. Our modified (realistic) goal is to capture the vibe of each song and intensify that vibe for live performance, compensating for system limitations whenever necessary. Sometimes this means writing in some more drums or elaborating on some part I think I hear buried in the mix (or want to hear).

Dan Bergstrom
Danlar Music
Tualatin, Oregon

TH - HELP!!!!!

Have the Following: MAC plus, MACFACE INTERFACE, Performer 1.2, EPS.

Can't seem to get the computer to play the keyboard. And nobody up here in the provinces has any clue of how to do it!

Send diagrams, info, whatever.

HELP!!! PLEASE.

Henry Dempsey
Cape Elizabeth, ME 04107

[Ensoniq's response - The information that you included is too vague for us to work with. Contact ENSONIQ Customer Service at (215) 647-3930 and detail the situation for us. Our representatives would be glad to assist you.]

Dear Hacker:

I just finished reading the Interface this month and the letter about the clicking keys on a ESQ-1 caught my eye.

My SQ-80 is less than 4 months old and I agree it's a great machine. However, my keyboard has 4 keys that have a pronounced click, and several more with less annoying, but still audible clicks. It sounds as if the keys are landing on a hard surface instead of a rubber stop.

This is not a problem when performing or playing at volume. But it becomes very annoying when I am practicing at home, playing soft classical passages. Is this a common problem with Ensoniq keyboards? It's not that it's a major issue, but it is discouraging when your new $2000 instrument starts sounding like a $100 plastic toy.

David Corley
ST. Louis, MO

[Ensoniq's response - The click that you hear on the SQ-80 is in the design of the keyboard assembly. The firm stop is used to prevent the keys from accidently entering the pressure region. We are working on ways to reduce the click.]

Dear Hacker:

Thank you for printing Phil Rosine's review of MSCI in the August issue of the Transoniq Hacker. I would like to point out that the name of the product is MSCI: Mirage Sound Creation Interface (not MIDI Sound Creation Interface).

Also note that we are selling the program for $55.00 plus $5.00 shipping and handling (not $59.95 which appears in the box of the review). The demo version sells for $10 (not $5 as stated in the feature table).

Jeffrey M Richter
Lindenwold, NJ

[TH - Seems like nobody EVER says - "Hey, you sure spelled the name of my company right." (Sorry about the errors.)]

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Dear Transoniq Hacker,

Back in April, I purchased an EPS; since then it's been like a wife to me. Even the best of marriages are bound to have some problems. Aren't they? Well, currently I'm having two.

My first problem is: SAMPLE RATE CONVERSIONS. When I try to convert the sampling rate (lower) on any sound, it becomes a totally different sound. A horrible sound, to be exact. It doesn't resemble the original in any way! As a matter of fact, when the screen reads "OLD NEW" scrolling to "OLD" doesn't return me back to the original sound. My only way out is reloading the sound. Does anybody have an answer or a solution to my problem? I'm totally in the dark about this one!

Second problem: NOISE. Upon loading and selecting a sound, it's fine! BUT when I strike a key, any key, that's where the noise comes in. It's not too bad at first; but as time goes on, it seems to get louder and louder. Recording to my little multi-track is out of the question. It's real noticeable. The sound resembles the leader tone on data tapes. It's a high-pitched "eee...". Could the cause be faulty grounding in my room or house? Or extraterrestrial beings landing in my backyard? Or even worse?!

Nevertheless, this is one killer board! I'll appreciate any help I can get on my problems; I need to get things straight with by wife again.

Thank you
Gerry G. Carter
Denver, CO

[Ensoniq's response - Make sure you are using the latest OS (1.5).]

Dear Hacker:

Just some comments on a couple items raised by a few frustrated ESQ1 owners in previous issues:

A) Tape Cassette Interface Problems: After trying several inexpensive portable cassette units (unsuccessfully), I settled on a Panasonic model RQ2738. It's a portable data program recorder with audible monitor feature. To make it work though, you will need two Radio Shack 40DB in-line attenuators-- one in each connection to the ESQ-1. Without the attenuators, it won't work-- probably because of overload distortion. I suspect level problems might account for many of the cassette interface problems with other cassette units as well. The Panasonic RQ2738 (if you can still get one) works very well- with the attenuators.

B) Music Direct's C64 ESQ-1 Librarian Program: It took one follow up letter, but I did get my copy (plus a courtesy backup copy) back in January, 1988. Works great - it's strictly a patch librarian, no sequences, no printer utility, but you have immediate access to up to 12 * 40 = 480 sounds if you choose to load all 12 banks. Very simple to use - menu driven. A good buy for the money, in fact it's almost put the RQ2738 out of a job!

Also I recently obtained "The Worx" - 1740 sounds from Softworx, Bayonet PT, Florida, on C64 1541 floppy/Music Direct format, and I'm very happy with their product as well.

C) General Comments: I'm not sure what success others out there will have in obtaining the above products (some of them may have been discontinued), but with some scrounging and little luck, who knows! My ESQ1 is still at version 2.00 and I'm not sure if the newer software upgrades would have a bearing on the operation of Music Direct's program. I suppose I'll find out when I upgrade.

Thanks to the Hacker staff for a very helpful and entertaining magazine.

JDM
Regina. Sask., Canada

[Ensoniq's response - We've also had good success with the Radio Shack decks designed for use with computers.]

Dear TH Interface,

As an SQ-80 owner, I have experienced some problems with timing delays between sequences. This sometimes barely noticeable millisecond hesitation gets worse between sequences with different track assignments or when sending program change information to my Alesis HR-16 drum machine. This glitch sometimes results in an obnoxious carry-over tone from sequence A to sequence B. The problem occurs when auditioning sequences back-to-back and when in song play, or even in a single sequence loop. I have tried quantizing, changing track assignments, even appending sequences together when possible. Sometimes it makes the hesitation less noticeable, but most of the time I'm left with unusable sequences. I'd appreciate any advice or clues to alleviate this problem.

I have also sometimes encountered problems with the step editing function when removing unwanted notes from the end of a sequence. After removing the note(s), I "PLAY NEW TRACK," and the sequencer plays exactly how I performed the edit; however, after I "KEEP NEW TRACK" and then play it back, I discover that my unwanted notes reappear!

Help!
Greg Weber
Dover, NH

[Ensoniq's response - This isn't something that we have ever come across before. If you can send us a disk that has the glitched sequence information on it, and detail in a letter exactly what steps you followed to make the problem occur, we would be glad to look into it.

Send to: ENSONIQ Corp., 155 Great Valley Pkwy., Malvern, PA 19355, Attn: Steve Mash.]

Dear Sir.

I'm now the proud owner of an EPS, and consequently have been reading your articles and letter pages with great interest. I agree with many of the comments I've seen so far - lack of real manual, off center "center" par

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position, etc., but here's some comments I've not seen mentioned yet.

1. If I construct a wavesample, set of layers, or instrument larger than the 800K storage space available on a floppy disk, how can I save it (apart from hard disk)? If not, how about future upgrades to allow internal memory to be "segmented". In an extreme example - say an instrument (or even a wavesample) of 1200 block size split into two segments onto disks, and reloadable back into one instrument or wavesample.

2. While on the subject of memory storage: If I am using the EPS in MultiMode, say instruments 1 to 6, and each instrument has its own outputs and performance characteristics - and I wish to store this "snapshot" to match with my outboard computer sequence file. As I can't fit all these instruments onto one disk, I have to dump in the following way. First, as many instruments as I can fit onto disk 1, plus bank 1 memory, - then delete these instruments in internal memory and then save the remaining instruments plus bank 2 memory onto the second disk. When loading my song instruments back into the EPS at another time, bank 1 still sees the full six instrument locations and "double-loads" its available sounds. I then may have to delete any excess instruments (if the EPS asks) and then load bank 2 from the second disk. Is there a more efficient way to handle this procedure?

3. As the sample quality of the EPS definitely places it further upmarket than "budget", surely there must be many users like myself, who are running external computer sequencers. In my case - an Atari 1040ST with Hybrid Arts software. So I have no use for the internal sequencer and the memory it occupies with the 4X expander. Is the sequencer software-based? If so, could an alternate OS be developed minus sequencer, perhaps incorporating expanded editing features - resonance filter, multiple loop points, or whatever the hardware might handle? A user would still have the choice of booting either OS.

4. A minor problem I've found in two different OEX-8 expander boxes - Output 2 ONLY produces nasty loud clicks when copying layers or wavesamples. Could this be my EPS?

5. Could you recommend an Atari visual editing program for the EPS? Any chance that Alchemy will be ported over??

6. As the Atari 1040 sports RS232 and no SCSI port, could we have this option of data transfer on the EPS? Possibly the huge Atari base in Europe, Australia and elsewhere would make this realistic. If the EPS is capable of transferring pieces of sample data to Alchemy, then is MIDI data transfer an elegant alternative? I've found the S-900 editing packages unbearably slow due to the MIDI up and down loads.

Well, thanks for your time and space. I've got a great bunch of samples in the last couple of months and my "buttoning" is getting better all the time! Sorta like a great big typewriter, isn't it?

Yours optimistically,
Paul Draper
Brisbane, Australia

[TH - Actually, there are at least a couple companies making SCSI port adaptors for the ST. The one who's been doing it the longest (and whose address we have handy) is Supra Corp., 1133 Commercial Way, Albany, OR 97321.

Unfortunately, at this time, Blank Software has no plans for porting Alchemy over to the Atari ST.]

[Ensoniq's response - 1. Larger files can be saved to SCSI. We are looking at modifying the floppy-save function but it is complicated to keep track of multiple disks.

2. The most efficient way is to only have the instruments that you are saving to the first disk in your internal memory. Save the instruments separately to the disk, then as a bank. Delete them from internal memory. Do the same procedure for the bank you're saving to the second disk.

3. The sequencer does not occupy sample memory and adds nothing to the cost of the EPS. Someone can certainly write a new OS if they choose, although filter resonance is not possible.

4. This was a bug that was corrected in OS 1.5.

5. We don't have any info yet for an Atari program; you may want to check with Blank Software.

6. RS232 would be so slow that no one would ever use it. MIDI would be faster; SCSI is almost instantaneous.]

Dear Hacker -

You people seem to have very close communication with Ensoniq so maybe you can answer this.

My company has been producing sequences for musicians for four and a half years and we support several computer/sequencer brands. We've been ecstatic as more of the hardware and software based sequencer manufacturers begin to adopt the MIDI song file standard as this means our songs will work on most systems that can read these files.

Is Ensoniq planning to adopt this standard for the sequencers built into the ESQ-1 and/or SQ-80? We get five or six calls a week from Ensoniq owners who have heard our product and would like to buy. We have a library of almost 400 songs and would have to port these units in real time, which could produce unpredictable results. In addition, we have virtually no spare "real time") I'm fairly confident that Ensoniq isn't interested in adopting the standard just to benefit my company, but it seems there would be many advantages for the ESQ/SQ-80 owner who could load, in a simple manner, sequences generated by units other than those manufactured by Ensoniq.

A song in standard MIDI file format would load from disk as one continuous track composed of mixed MIDI channels. I realize that the ESQ would require an external disk drive. Our songs typically use four to five MIDI channels. Based on my understanding of the ESQ and SQ-80 manuals, the available memory, voices, and multitimbral setup is such that MIDI file songs could at least "fit" into these units. Editing may or may not be easy but most of the folks who call us are performing musicians who don't have a lot of time for programming and want to get their hands on more songs NOW. Editing seems to be a secondary concern.

I understand the need to prioritize marketing plans, but is Ensoniq (or any third party developer) looking at this and are there any technical complications in adopting the standard?

Thanks for a very informative magazine.

Sincerely,
Stephen Kern
Trycho Tunes
Anaheim, CA

[TH - There's usually a world of problems generated when a company switches standards in the middle of a product's life.]

[Ensoniq's response - We really can't alter the sequence structures at this point. One of the reasons we can hold as many notes as we do in a limited amount of memory is due to our proprietary encoding scheme. There isn't any room left in the OS to add a translation function.]

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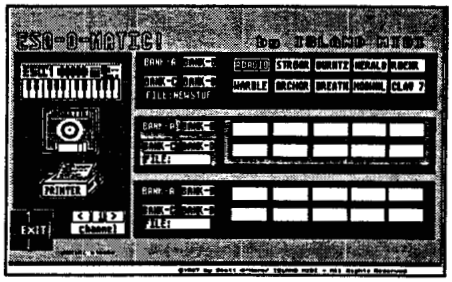

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