

TRANSONIQ HACKER

The Independent News Magazine for Ensoniq Users

LFO's: Useable, or What?

by Clark Salisbury and Erick Hailstone

The following is a somewhat modified (to run on both the ESQ'1 and the SQ-80) excerpt from the book *"Programming the Ensoniq SQ-80"*, due out from Alexander Publishing, (14536 Roscoe Blvd, Suites 105/110, Panorama City, CA 91402) this spring.

LFO's. Every synthesizer has 'em. So what are they good for? And what does LFO stand for? And how do I use them? And where does electricity go once it leaves the toaster?

Well, first things first. LFO stands for Low Frequency Oscillator, and yes, it is an oscillator not unlike the audio oscillators found in the ESQ/SQ80, but there are a couple of significant differences. First, the LFO's have a much more limited selection of waveforms available, specifically, a triangle wave (a close relative of the sine wave), a square wave, a sawtooth (or ramp) wave, and a noise wave. Second, an LFO oscillates (cycles) at a much lower frequency than the audio oscillators. Its frequency range is below the normal audio range; in other words, LFO's will complete one cycle in a long enough period of time that we wouldn't be able to hear their output as a pitched sound. This isn't a problem, though, as LFO's are used as controllers, just as envelopes are used as controllers. But where envelopes are one-shot controllers, LFO's are cyclic controllers, swinging from positive to negative and back again, repetitively.

LFO's have four primary uses: to control pitch (creating vibrato and trill effects), to control amplitude (creating tremolo and cross-fade effects), to control timbre (for repetitive wah-wah, or "growl" effects, as well as quasi-phase shifting effects) and to produce automated stereo panning effects.

Let's set up one of the most common uses of an LFO, a vibrato effect. To follow along with this example, you'll first need to enter the "VIOLIN" patch included in this article into your ESQ/SQ80's memory. For the waves, we're using the "STRING" wave and the "BOWING" wave for the SQ-80; for the ESQ'1, use the "SAW" wave for all three oscillators - all techniques described in this article will still apply. Next, since we just want to work with OSC 1, let's turn the other two off by selecting DCA 2 and DCA 3, and setting "OUTPUT=" to "OFF" for each of them.

Now we should be hearing the output of OSC 1 all by itself. Select OSC 1, and set MOD 1 to LFO 1, and MOD amount to "+32". This will connect LFO 1 to OSC 1. Now all we need to do is make it do something - hopefully something interesting. So head over to the LFO 1 page. In the upper-left hand corner you will find "FREQ". This controls LFO rate - set it to "18". Next to "FREQ" is the "RESET" switch. When this is set to "ON" the LFO will return to the beginning of its cycle whenever a new key is played; when it's "OFF", the LFO continues through its cycle from whatever point it is currently at regardless of whether or not any keys have been played - for now, leave this set to "ON". Next is the "HUMAN" function. When off, the LFO will cycle with mechanical precision. When set to "ON", slight variations are introduced to the LFO's speed, giving it a less mechanical, more "human" sound. Leave this set to "OFF" for now. And in the upper-right hand corner is the "WAV=" function. This allows you to select which of the four waves you want the LFO to produce. For now, let's use the "TRI" (triangle) wave.

Along the bottom of the display are four more parameters. Reading from left to right, the first is "L1", the next is "DELAY", and then "L2". What we have here, in actuality, is a basic envelope. If you substitute the label "T1" for the label "DELAY", you'll see that

In This Issue...

MIRAGE:

Review: MIDICaster <i>Walter Daniel</i>	6
A Masking Crossfade for the Mirage <i>Doug Parker</i>	9
Mirage Drum Machine Sequencer <i>Nathan Miles</i>	19

ESQ-1/ SQ-80:

LFO's: Useable, or What? <i>Salisbury & Hailstone</i>	Cover
Review: MIDI Connection, Vol. 5 <i>Chris Barth</i>	7
MIDI Song Pointers & Sequencing <i>Christian Super</i>	9
Review: Soundset 1 from Syntaur <i>Rick Hall</i>	11
Hackerpatch <i>Hailstone, Mims, Contributors</i>	22

EPS:

Tips on Using the EPS <i>Clark Salisbury</i>	12
---	----

GENERAL:

Random Notes.....	3
Hypersoniq.....	3
Ensoniq Tour Dates.....	10
Review: Flexible Extras <i>Dave Caruso</i>	14
Inside the "Q" Chip <i>Dick Lord</i>	16
Classifieds.....	24
The Interface.....	25

this is similar, in a basic way, to a couple of stages of the normal envelope generators found in the ESQ/SQ80. Admittedly, the envelopes one might create with only two levels and one time are somewhat limited, but this is quite a bit more control than one normally gets in a single LFO. And if that isn't enough control for you, you actually have a modulation input, labeled "MOD=", to which you can route an envelope, a mod wheel, even another LFO! But we're getting ahead of ourselves here.

ESQ-1 PROG: VIOLIN								BY: CLARK SALISBURY									
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH									
OSC 1	0	0	0	STRING	OFF	--	OFF	--									
OSC 2	0	0	0	STRING	OFF	--	OFF	--									
OSC 3	0	0	0	BOWING	OFF	--	OFF	--									
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH											
DCA 1	58	ON	OFF	--	OFF	--											
DCA 2	58	ON	OFF	--	OFF	--											
DCA 3	58	ON	OFF	--	OFF	--											
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH										
FILTER	53	0	26	ENV3	20	OFF	--										
	FINAL VOL	PAN	PAN MOD	DEPTH													
DCA 4	63	8	OFF	--													
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD									
LFO 1	23	ON	OFF	TRI	0	0	0	WHEEL									
LFO 2	20	OFF	OFF	TRI	63	63	63	OFF									
LFO 3	20	OFF	OFF	TRI	63	63	63	OFF									
	L1	L2	L3	LV	T1W	T1	T2	T3	T4	TK							
ENV 1	0	0	0	00L	0	0	0	0	0	0							
ENV 2	0	0	0	00L	0	0	0	0	0	0							
ENV 3	63	0	0	00L	0	0	14	0	38	0							
ENV 4	42	61	43	30L	0	0	21	63	14	0							
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC									
MODES	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF									
	SPLIT/LAYER	S/L PRG	LAYER	LAYER PRG	SPLIT	SPLIT PRG	SPLIT KEY										
	OFF	--	OFF	--	OFF	--	--										

If you play a few notes on the keyboard, you'll notice that we're getting no effect from the LFO, at least not yet. We still need to set an amount for the LFO, and as you may have guessed, we use "L1", "L2", and "DELAY" for this. The LFO will always start out at the level set by "L1", and move to the level set by "L2" at the rate set by "DELAY" (note that "DELAY" refers to the rate of change from one level to the next - not the time it takes to move from one level to the next as with the normal envelope generators found in the ESQ/SQ80). Let's set up a simple "on" type of LFO vibrato. Set "L2" to "12", and leave "L1" and "DELAY" set to "63". This will cause the LFO to come on immediately, since it will take the shortest time (a time of 63) for it to get from "L1" to "L2". Play a few notes. A little abrupt, isn't it? Well, we can fix that pretty easily. Simply set the value for "DELAY" to a fairly low number, say, "05". This will cause the LFO to gradually move from 0 to 12. Play a note or two and verify this. Now try setting "L1" to a value of "12", and "L2" to "00". Now the effect is that the vibrato comes on instantly, to the level set by "L1", and then slowly dies away at the rate set by "DELAY" to the level set by "L2". You will find that you can control how pronounced the vibrato effect is, as well as how long it takes to build up or die down, simply by manipulating the "DELAY" and level controls.

Let's check out the effects of a couple of the other parameters available from the LFO page. Leave "L1" set to "00", "DELAY" set to "63", and "L2" set to "12". Play a note repeatedly, and notice where the pitch of the note starts. Now set the "RESET" control to "ON". See how the note always starts at the same pitch now? This can be handy for synchronizing LFO's as well as for those times when you want the effect of an LFO to start predictably for each new keystroke. Now try setting the "HUMAN" control "ON", and listen again. The effect is subtle, but you may be able to hear the small variations in the speed of the vibrato with this control on. Finally, try out each of the four waves available. The square wave will produce a trill-like sound, and the sawtooth wave will produce a pitch that rises steadily for a moment, then suddenly snaps back down and begins rising again.

The last wave, "NOI" (noise), is not really noise in the strictest sense. Normally, noise is a non-cyclic wave with a more or less even distribution of frequencies. The "noise" wave here is actually cyclic, and using it for a modulation source can have some interesting effects. If you apply the noise wave as a modulator, using higher frequencies (say, 05 and higher), it will produce an effect similar to what would be produced in analog systems, and that would be primarily to add a hissy, non-pitched component to a sound. Without changing

anything else, try setting "WAVE" to "NOI" and you'll hear this effect. You can make the effect more pronounced, of course, by setting the value for "L2" to higher numbers. But here's something interesting. Try setting the frequency ("FREQ=") to a value of "0". You will now be able to hear the individual "steps" of the noise wave "playing through" at a fairly slow rate. This can be a pretty interesting effect, especially when applied to stereo panning or the filter cutoff point.

So now we've got some basic vibrato effects to stuff into our suitcase of tricks. But what do we do if we want more control over the vibrato? We may want to control it from, say, the mod wheel, so that we have a way to bring it in only as needed. This is easy enough to accomplish. Simply select "MOD=" from the LFO page, and set it to "WHEEL". Now moving the mod wheel forward will increase the vibrato effect. And if we want to be able to go from no vibrato to some amount of vibrato, we need only to make sure that both "L1" and "L2" are set to "00". In this way, the only thing that controls LFO amount is the mod wheel.

This arrangement of having a modulation input to the LFO also allows us to use any of the modulators to control the LFO, and therefore, any effect that the LFO has been programmed to do. Think about it. Use velocity as an LFO modulator, and you'll have vibrato only on the notes that you play hard. Use LFO 2 to control LFO 1 so that vibrato (or tremolo, or whatever effect you want to use) increases and decreases at the rate (and according to the wave) set for LFO 2. There's a ton of interesting effects you can do using the LFO's once you start applying different modulators.

So far we've been using the LFO to control oscillator pitch, primarily. This is a fundamental application - the creation of vibrato effects. LFO's can go to a lot of other places besides the oscillators, however. Try connecting an LFO to the filter. Use a maximum negative modulation amount (-63). Set the LFO to produce a square wave at a frequency of around 15 or so, and set the LFO levels to produce a maximum output (63). This can be used to create a rhythmic pulsating effect, as the LFO sends the filter cutoff point down to 0, cutting off the upper (and perhaps all) harmonics. Or how about connecting the same LFO to all three of the DCA's, using the same square wave? If the DCA's are set with their manual levels at "00", and the LFO is set with "L1" set to "63", "L2" set to "00", and "DELAY" set to "02" or so, you might be able to create some interesting echo effects. Then again, you might not. The point is, experiment!

ensoniq Owners

As A Very Special Offer
Mirage and ESQ-1
Owners Can Buy

BLANK SOFTWARE™
at
BELOW COST

DIRECTLY from the DISTRIBUTOR

Sound Lab V1.1	\$150.00	(Mirage)
Sound File Mac	\$ 40.00	(ESQ-1)
Sound File C-64	\$ 35.00	(ESQ-1)

While Supplies Last

order number
(617)-244-6954
prepaid M.O. check,
or credit card only
NO COD, US funds
all sales final



220 Boylston Street * #306
Chestnut Hill * MA * 02167

MUSIC - SOFTWARE

Front Panel

RND (♪♪♪)

They're here... Our writers are starting to get their EPS's. Clark's first article appears elsewhere in this issue. More are in the works.

* * *

The new "bug-free" version of the 3.4 O.S. for the ESQ-1 is now officially out and designated 3.5. For more details, see *The Interface*.

* * *

You've probably been lying awake nights asking yourself, "How do they do it?? It's been three years since they started out. Their page count has gone up over 400%, their word count has gone up more than that, their appearance has drastically improved, the Post Office just raised Third Class rates by 25% - and they still haven't changed their price!!"

Well, part of the answer is that we get some of the benefits of our own small economy of scale. Nothing to compare with the "real magazines" - but it helps. And, part of the answer is advertisers (bless 'em - and, more importantly, tell 'em where you saw their ad!). Unfortunately, part of the answer is also that we can't keep holding this price forever. This is not an easy decision. We know the trade-offs involved here. A lower price helps circulation, which helps advertisers, which builds page count, which helps circulation... But, we've looked everything over, and at this point, it looks like a small price increase is inevitable. Anyway, as of now, our regular subscription rate is going from \$20 per year to \$23. Introductory rates and the cover price are also going up. (In case you're wondering, the penultimate straw was the postal rate increase. The final straw was filling out our taxes.)

* * *

Speaking of ways that the government is helping to make the world a better place... Evil Non-Amuricans have been cleverly tricking the U.S. into a computer revolution and generally raising our standard of living by forcing us to buy ever cheaper RAMs and ROMs (among other things). Well, naturally this has to stop. The U.S. Government has saved us from all this by placing a tariff on computer memories. Over the last few months, this has doubled the cost of RAM. (The Feds graciously absorbing most the difference.) One of the little side-effects of all this is that both **IVM** and **Virtual** have gotten out of the Mirage memory expander business. It probably isn't going to make the memory expansion for the EPS (or even the EPS itself) any cheaper to manufacture either.

* * *

We're now set up to handle newsstand sales. If you're a music store dealer and you'd like to start carrying the *Hacker*, please let us know. If you know of a music store that *should* start carrying the *Hacker*, please let *them* know!

TRANSONIQ-NET HELP WITH QUESTIONS

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

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

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

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

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

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

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

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

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

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

HYPERSOVIQ NEW PRODUCT RELEASES

Digidesign, the developers of *Sound Designer* software for the Macintosh and now the distributors for Turtle Beach Softworks, have announced the imminent release of *SampleVision*, a waveform editor for the IBM PC and the Ensoniq EPS, developed by Turtle Beach. The program has a mouse-driven graphic interface and allows graphic editing of waveforms, three-dimensional frequency analysis, and various digital signal processing functions. For further information, write or call: Digidesign, 1360 Willow Rd., Suite 101, Menlo Park, CA 94025, (415) 327-8811.

Dr. T has released an update to *EsqApade* so it functions with the SQ-80. It also has updated screens and is fully compatible with Dr. T's Multi Program Environment - plus, the "Patch Injector" - a new desktop accessory. For further info, call or write: 220 Boylston St., #306, Chestnut Hill, MA 02167. 617-244-6954.

CHANGE OF ADDRESS

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

BACK ISSUES

Back issues are \$2.50 each. (Overseas: \$3 each.) Issues 1-9, 11, 13-19, 21, 22, and 27 are no longer available. Subscriptions will be extended an equal number of issues for any issues ordered that are not available at the time we receive your order. ESQ-1 coverage started with Issue Number 13. SQ-80 coverage started with Number 29, (although most ESQ-1 coverage also applies to the SQ-80). EPS coverage started with Number 30. Permission has been given to photocopy issues that we no longer have available - check the classifieds for people offering them. Reprints in our "Quick and Dirty Reprint Series" are available: MIRAGE OPERATIONS, for \$5, and MIRAGE SAMPLE REVIEWS for \$4. Each contains material from the first 17 issues.

SUBSCRIPTION INFORMATION

12 MONTHLY ISSUES

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

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

Feed your Mirage some Leaping Lizards.

• New operating systems for the Ensoniq Mirage •

• THE IGUANA •

MIDI System Exclusive Librarian... \$39.95

"...worth its weight in gold" KEYBOARD, Jan. 88.

Turn your Mirage into a MIDI disk drive at a fraction of the cost of the real thing! • Store your MIDI SysEx data on ordinary Mirage sound disks • 128k memory buffer • Transmits MIDI data request messages • Play your patches from the Mirage keyboard • Professionally written for ease of use, with complete documentation • A much more flexible alternative for Mirage/ESQ owners, store 1920 ESQ voices, or 6 or more sequences on a single disk • **THE IGUANA** is quickly being regarded as a standard, already third party voices & patches are available in **THE IGUANA** format • You won't find any MIDI disk drive or similar software with ALL these features, nor will they be as compatible with as many MIDI devices as **THE IGUANA**.

Here is but a brief list of compatible devices, please call us for more information if you have an instrument not listed below:

YAMAHA • ALL - including all keyboards, rack modules, drum machines, effects units, & sequencers
ALESIS • HR-16, MMT-8
ROLAND • D-50, D-550, S-10, GM-70, MT-32, JX-8P, Octapad, & more
AKAI • ALL
KORG • DDD-1, DDD-5, DS-8, EX-800, DW-8000, & more
KAWAI • ALL
OBERHEIM • ALL
SEQUENTIAL • ALL
ENSONIQ • ESQ-1, ESQ-m

• THE CHAMELEON •

The ultimate Multi-Utility disk... \$39.95

A collection of 15 unique utility programs. **THE CHAMELEON** incorporates all the features of our best selling **LLDU-1** and **DIAGNOS**, improved them, then added even more features. Format a disk in 30 seconds and place the operating system of your choice on the disk at the same time. Copy any operating system. Make backups of your previously uncopyable "boot" disks, make foolproof backups of your library disks. Copies disks using a single Mirage or using two Mirages linked together. Repair disk error and recover lost data! Our unique "**Auto-Detect**" feature detects when you have inserted a new disk and begins disk functions automatically. But that's not all!!! You can give your Mirage a complete check-up. Check for common problems such as: a sticky keypad, a sticky disk drive, an off center pitch wheel or modulation wheel, keys that don't play, or keys that sound louder or softer than the other keys. You can easily check these & other problems. No other utility disk offers as many features as **THE CHAMELEON**.

• MIRAGE MONITOR V1.0 •

Design your own O.S.... \$49.95

For the C-64 or C-128. Not a visual editor! This program allows you to disassemble & assemble the entire 160k of Mirage memory in true 6809 assembly language. **MIRAGE MONITOR V1.0** gives you direct access to the operating system memory, sequencer memory, sample memory, disk drive, VIA, ROM, MIDI UART, Q-chip, etc., entirely from the Commodore. Use **MIRAGE MONITOR V1.0** to customize your Mirage O.S., or create entirely new O.S.'s.

• O.S. 3.d •

Improve your performance... \$24.95

"...no Mirage keyboard owner should do without" T.H. 4/88

Turn your Mirage into the ultimate controller keyboard! **O.S. 3.d** is an update to Ensoniq's O.S. 3.2 which adds new performance enhancements to the Mirage while retaining all of O.S. 3.2's features (except sampling): Receive and transmit over separate MIDI channels. Re-define the modulation wheel to transmit other MIDI controller data in real time, such as breath control, volume, portamento time, data entry, etc. Re-define the footswitch to transmit other MIDI switch information other than sustain. Transpose by semi-tones to give the Mirage keyboard an effective range of 128 notes. Transposing affects the Mirage's internal voices as well as the voices of your other instruments. A MIDI "panic button" sends an all notes off message to the Mirage and to your other instruments. Parameter changes are now more than three times faster. Plus three new banks of sounds.

• THE IGUANA JUNIOR •

For the performing musician... \$24.95

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

Available now at your local Ensoniq dealer or direct from Leaping Lizards. Please add \$2.50 shipping with your order.

Order TOLL - FREE:

1-800-367-0333



LEAPING
Lizards

Leaping Lizards, 1614 1/2 NE 80th
Seattle, WA 98115-4450

Other enquiries: (206) 527-3431

Attention Mirage & EPS owners !

New CDs now in stock:

PROSONUS • SOUND IDEAS

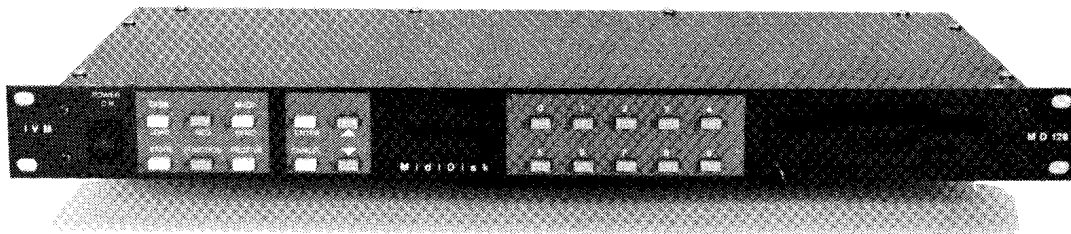
• MCGILL UNIVERSITY MASTER SAMPLES •

Leaping Lizards is now exclusively offering these sampling compact disks to Transoniq Hacker readers for possibly the lowest price anywhere. Designed for use with any CD player & any sampler, these crystal clear digital recordings of real instruments let you effortlessly make incredible sounding samples. These CD's feature a wide variety of sounds: percussion, brass, woodwinds, piano, sax, strings, ensemble, chorus, sound effects, synthesizers, even authentic period instruments. Disks are available individually and in sets. Prices range from \$60 to \$80 per disk.

Call us for more details at 1-800-367-0333.

HIGH CAPACITY GENERIC SYSTEM EXCLUSIVE STORAGE DEVICE

(R)EVOLUTIONARY!



AT LAST: THE "MISSING LINK" IN YOUR MIDI TOOLBOX!

IVM's new MidiDisk allows you to store and access **all** your MIDI information on convenient 800k floppies!.... and we've added a new "Dump Request" feature to access keyboards and other MIDI Instruments without built-in MIDI "Send" capability.

The IVM MidiDrive is a rack-mounted 3 1/2 inch floppy disk drive Midi storage device. The unit enables the musician to load and save any MIDI data such as sequencer dumps, synthesizer patch data, and digital sample data.

The software upgradable architecture allows the unit to be updated in the future for any new MIDI keyboards, sequencers, or other Midi gear not equipped with a storage facility.

The device has 128 K of user RAM (a greater than 42,000 note buffer). Each double-sided diskette will hold up to 800 K bytes (266,667 Midi Notes) of Midi data in up to 63 variable length files. The 4 digit display allows easy user interface and the menu driven operating system will walk the user through the operation of the system.

SPECIFICATIONS

- **User Memory—128 K**
- **Disk Capacity—800 K**
- **Disk Type—3.5 " DSDD**
- **Size—19 " W x 1.75 " H**
(single rack height)
- **Disk Data Transfer Rate—**
128 K in 8.5 sec.
- **Interfaces: MIDI IN**
MIDI OUT
MIDI THRU

Price—\$449.95

MIDICaster

Review by Walter Daniel

FOR: Mirage.
PRODUCT: MIDICASTER v2.0.
PRICE: \$39.95.
FROM: The MIDI Connection, 7280 SW 104th, Beaverton, OR 97005,
(503) 641-7941.

There I was, minding my own business, when our fearless editor called and asked me if I wanted to review yet another Mirage operating system. "Gee, Jane," I waffled, "with all these labs to grade and midterms coming up, I've really got too much to do." After a little convincing, I relented and agreed to write the review. This OS turns the Mirage disk drive into a system exclusive librarian, so it sounded useful. "Never can have enough system exclusive data," I thought to myself.

WHAT IS IT, ANYWAY?

After allowing the package to age properly for a couple of weeks, I started using MIDICaster. Sure enough, it turns the Mirage into a system exclusive librarian, but with a twist: all the new features are performed without disturbing Ensoniq OS 3.2! The sampling code has been removed to free memory, so use MASOS for sampling. The sequencer memory is used to buffer data and hold transient code to squeeze in the extra features. When building a sysex file, MIDICaster uses sample memory to store the data. Sysex files can be transferred directly to MIDI from disk without disturbing the present samples! Sequencer memory is used to buffer the data, but this presents no problems since I almost never use the Mirage sequencer in the first place. (Whoops. Our fearless editor just called to remind me to finish this review.)

BUT HOW DOES IT WORK?

When the disk is booted, the Mirage acts as if good old OS 3.2 is running. Only one MIDICaster function is available from OS 3.2, that of moving files from disk to MIDI. To build and save files, you have to load the transient part of MIDICaster. Load sequence #1 (#2 if you do not want filtering of non-system exclusive messages) from the MIDICaster disk, then press the Sample Upper key to enter the sysex librarian. From here, the Mirage can be set to receive data from MIDI, transmit data from memory to MIDI, clear the memory of the last sysex message, clear the memory of all messages, or load and save sysex files to disk. I connected my Yamaha RX11 drum machine to my Mirage, set MIDICaster to receive, then initiated a pattern/song dump from the RX11 front panel. I cleared several patterns in the RX11, then dumped the data from the Mirage and got back my original patterns. I saved the data to disk and cleared more patterns out of the RX11. I exited the transient part of MIDICaster and loaded a string sample. Now for the hook--I executed the transmit disk to MIDI command to reload the RX11. Yes, the Mirage cannot play when the file is being sent, but this 8k+ file only took several seconds to be sent. The RX11 patterns were restored, and the sample in the Mirage was not disturbed! This thing really works.

How can you use MIDICaster? Since an instrument will ignore all system exclusive commands except those with the proper ID and on the proper channel, you can dump several files into the Mirage memory at once. While at home, you could create a current setup file of all the patches in all your keyboards. If one of your machines crashes while you are on the road (i.e., away from your computer and patch librarians), you could reload patches from your Mirage. In fact, MIDICaster is fast enough to conveniently load patches or patterns or whatever

between songs while playing live. The non-transient part of MIDICaster can be copied to your work disks, so the transmit disk to MIDI command is always available. If you have an instrument that cannot be coerced into dumping data with a front panel command (e.g., Casio CZ-101), you have a minor problem. You can send a MIDI request for data dump from your computer and receive the data with the Mirage. I understand that a future transient module of MIDICaster will address this handshaking problem.

DOCUMENTATION

The manual comes in a 3-ring binder with 15 pages of text, a table of contents, and a helpful diagram of the Mirage control panel that shows which buttons control which MIDICaster commands. There are a few typos, nothing that hurts legibility, in this nicely laser-printed document. The material could stand a bit better organization (sorry, I've been grading lab reports again).

CONCLUSIONS

There are some nifty ideas and unique programming in this product. It's not expensive and uses a disk drive that already exists. Although it excels in live use, it has applications for studio types as well. There could be more modules in the future, so this OS could do even more. I just wish there was a way to unify all the different Mirage operating systems I now use (six at last count). ■

TECHNOSIS

**INNOVATIVE PROFESSIONAL
TOOLS FOR THE MUSICIAN**

(YOU'RE NOT GOING TO BELIEVE OUR SQ-80 VOICES)

TECHNOSIS
3960 LAUREL CANYON BLVD., #353,
STUDIO CITY, CA 91604.

(213) 656-3515

The Patch Bay

MIDI Connection Vol. 5

Patch Review by Chris Barth

FOR: ESQ-1, SQ-80.
PRODUCT: Vol. 5 - Variety pack.
PRICE: \$10.95.
FROM: MIDI Connection, 7280 SW 104th, Beaverton, OR 97005.

Here we go again with 40 sounds from Clark Salisbury and Erick Hailstone, offered under the MIDI CONNECTION banner. Their contributions to the Hacker have been quite substantial over the last few years, and I've learned much from what they've had to say. However, let's put aside the kudos, pretend we don't know them, and listen to their latest package.

You certainly can't argue with the price. At \$10.95 for 40 sounds on data cassette, even if only ten or twenty sounds strike your fancy, it's a pretty good deal from a cost per sound viewpoint. For this reason alone, the more adventurous of you out there may want to consider buying this set no matter what. I recommend buying a blank RAM cartridge or two, and then spending your money on data cassettes instead of cartridges when you buy sounds. This way, you can assemble your personal favorites auditioned from a number of programmers.

The data cassette is accompanied by some notes on each of the sounds. This is a trend which I hope continues! While not quite as extensive as the documentation TECHNOSIS offers with its sounds, it's certainly better than the complete lack of documentation offered by most other vendors.

There are six percussion sounds: a kick drum, electronic toms, wire brushes, hi hat, and two snare drums. SNARE8 is a very good acoustic snare simulation, and split with JICK, the kick drum, works nicely. Both snares, though, have a loud sine wave component that seems a little out of place - more like a tom than a snare. It took a while to master the proper technique for the wire BRUSHS, but I liked the effect especially for jazzy pieces. TOMS3 copies the electronic Simmons drum sound; it's usable but not nearly as impressive as the two different ones available from MUSIC BANK. There is no cymbal in the set, but HI HAM is a combination open/closed hi hat. If you strike a note and hold it down, you have a closed hi hat; if you release the note quickly instead of holding it down, you have an open high hat. If you save your money, you could have a drum machine.

There are three basses, and all of them are tight, metallic - the kind referred to as electronic funk. These basses are like those heard in dance music, in sequenced lines or with slapback delay. These are not warm, traditional string bass sounds for jazz.

My favorite in the whole set is DIGVER, a spacey electronic piano with a built-in reverb effect. The reverb is simulated by panning the sound from one speaker to the other very quickly. It's a very pretty sound which lends itself well to contemporary ballads as well as new age performances. In a similar vein is CSPNO2, which features a sustaining synth sound following the initial piano attack. These are not Fender Rhodes simulations but new sounds which I really like. There is also one other piano, PIANO6, which is not as bright as the usual ESQ piano sounds and thus a little more suitable for classical pieces.

There are a few analog solo sounds, like the synth brass of ANALG1, and WINWO3, which the liner notes correctly

attribute to Steve Winwood. However, I really didn't care for some of the other sounds - the vibes, saxes, clarinet and cello in particular. They sound too much like "synthesized real-life sounds" and are not up to snuff with others I've heard. The saxes are especially disappointing. The reed waveform is probably the trickiest one in the ESQ, and if it's not done right, it doesn't work at all. The clarinet has an inappropriate sawtooth waveform and does not come close to the one available from Jim Johnson, which, to me, is still the best.

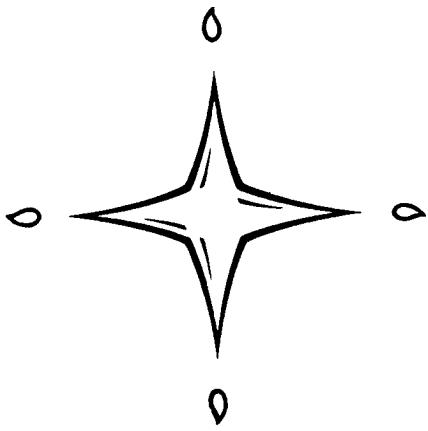
There are three organs, which are Hammond simulations to my ears. ORGAN3 is particularly clever in its use of the mod wheel to simulate pulling out the upper drawbars of the organ.

The set closes with some original ambient sounds, and one of them, CHERI, is a lot of fun. It's what programmers call an ambient bed; long attack, long sustain, long release time. It's an orchestral synth sound, and by varying the attack you can get different new age sounds from it.

The entire set is duplicated three times on data cassette, and I had no trouble loading it in the first time. As a bonus, the 40 sounds are duplicated on the other side of the tape in layered combinations. As layers go, though, I wasn't impressed with most of them - they seemed awkward or gimmicky. One good way to find better layers is to start with one sound, go to the split/layer page, turn on the layer function, and then scroll through your available sounds.

According to the printed material, this package is designed to offer a large variety of useful sounds that are in some way different from the Ensoniq library. This takes me by surprise because the overall tone of the set strikes me as very similar to the Ensoniq library; one of the sounds, the flutish synth AMBO, appears on an Ensoniq cartridge (look for it on Volume 5). (*Ed. - Clark tells us that when Ensoniq purchases one of their sounds they pop a new one in its place.*) There are really only a few must-have sounds in this set, and a little more cheese than I had expected. Then again, I've probably heard more ESQ sounds than the average bear, so I might be applying a stricter standard than others. What makes this package a viable proposition is the price; if you like the Ensoniq factory sounds and can't afford their ROM cartridges, you'll probably find more than enough here to justify your eleven bucks.

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



Cesium Sound

The Definitive SQ-80 Library

40 Voice Volumes

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

one	two	four	eight
\$12.50	\$20.00	\$30.00	\$50.00

Demo cassette \$5.00, list with descriptions, \$1.00

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

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

	one	two	four
ROM cards	\$50.00	\$90.00	\$160.00

RAM cards \$80.00 each

All four volumes on Opcode or Dr. T librarian disk \$80.00
 Demo cassette \$5.00, sound list with descriptions, \$1.00

TX81Z Sounds on Cassette

5 volumes (160 sounds) \$25.00

free list with descriptions

The Complete ESQ-1 Library

also available for SQ-80

80 Voice Cartridges

40 Voice Volumes

- | | |
|----------|--|
| A | 1. Acoustic Keyboards
2. Electric Keyboards |
| B | 3. Guitars and Basses
4. Drums and Percussion |
| C | 5. Lead Synths
6. Techno |
| D | 7. Space
8. Effects |
| E | 9. New Age 1
10. New Age 2 |
| F | 11. Pitched Percussion
12. Bells |
| G | 13. Plucked Strings
14. Voices |
| H | 15. Strings and Woodwinds
16. Brass and Saxes |

160 voice programmable cartridges with any four volumes \$90.00

80 voice programmable cartridges with any two volumes \$50.00

80 voice non-erasable cartridges A-H	each six	eight
	\$30	\$150 \$180

40 voice volumes on data cassette, Mirage diskette, or SQ-80 diskette \$12.50 each

Half Price Special! All 640 Sounds \$95.00

on data cassette, Mirage diskette, SQ-80 diskette, ESQ-apade data disk, or Blank Software or Opcode data disk

Demo cassette \$5.00, sound list with descriptions \$1.00.
 Manual explaining terminology in this ad, \$1.50.

Please include \$2.00 for shipping, CA residents add sales tax

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

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

MIDI Song Pointers, Sequencing, And The ESQ-1

By Christian Super

Using your ESQ-1 sequencer can save studio time if you are properly prepared and avoid a few pitfalls. Be prepared to devote lot of time at home composing and recording your parts. This will allow you the freedom to spend studio time on using MIDI to create wonderful sounds for your parts. However, first time users should be careful not to over-estimate the time savings in the studio.

THE PRELIMINARIES

For my current project, I sequenced all the keyboard parts in my ESQ-1. I only tried to get the sound close to what I wanted because I knew the final sound would be created in the studio. Most of the parts were quantized although some were left with a human feel. This decision is one each player must make for him or herself. Some parts (synths, pianos) seem to work better with quantizing while others (strings and other sounds with long attack or delay) work better with the player's feel. One thing I learned right away: record each kind of sound or part on the same track of all sequences in a song. That way the proper mute and MIDI channel assignment in the MIDI Mix Page of the ESQ-1 can be done a lot more easily. Once our producer, Steve Hunter (guitarist extraordinaire, known for his work with Lou Reed, Alice Cooper, and Peter Gabriel), completed drum programming, the actual recording began.

AT THE STUDIO

We started by recording the drums, a Linn Drum sync tone, and a SMPTE tone. Bass parts and some rhythm guitar parts were done next. Then, our first attempt at synchronizing the ESQ-1 to the 24 track failed! Visions of wasted work danced through my head. We were trying to use a Dr. Click to convert the Linn sync tone to the 24 PPQ (pulse per quarter) tone the ESQ-1 reads as a tape sync. The ESQ-1 played about 1/16 note per measure fast. This is probably due to the low 24 PPQ resolution or a bad recording of the sync tone. Whenever possible, record sync tones on a track without an adjacent recording and test the synchronization before removing the synch device.

Next, we tried an Atari 1040 computer with Hybrid Arts' Miditrak software to read the SMPTE tone and output MIDI time code. To my great relief, this combination worked perfectly. The Atari fed the ESQ-1 which acted as the master keyboard and sequencer for a Mirage, a Roland D-50, and three Yamaha TX modules. The MIDI through sound was created from a combination of these devices using MIDI. The ESQ-1's capability to assign different MIDI channels to each of the sequencer tracks was invaluable.

The new version of Miditrak supports MIDI song pointers and what an earsaver this function can be. At this point, the ESQ-1 control page is set to SYNC=MIDI CLOCK. Be sure to enable the MIDI song pointer in other sequencers (in my case the Miditrak software). Select the appropriate song and hit play. (We left the Miditrak in play to avoid having to find the SMPTE start point over and over.) Now you can just rewind or fast forward the 24 track to whatever point you wanted to record. Once the tape is rolling it takes less than a second for the MIDI song pointer to find its place and the sequencer plays the appropriate part. This is especially valuable when creating a sound for one particular part of a song. Rather than starting each pass of the sequencer at the beginning of the song, you can just listen to the particular passage you want. After many hours and many sounds, your ears will love it.

The use of the ESQ-1 sequencer and MIDI song pointer allows one more freedom to concentrate studio time on sound selection rather than technical execution of the parts. Ample time must be allowed up front for pre production and proper planning so this technique is helpful and not a hinderance once you reach the studio.

Author's Bio: Christian has been playing keyboards professionally for over 8 years. His last band, Blow-Up, released a critically acclaimed LP, which landed on year's best lists in Village Voice and the L.A. Herald Examiner. Currently, he's recording and songwriting for a number of projects. ■

A Masking Crossfade for the Mirage

By Doug Parker

What began with a borrowed D-50 ended with several disks of some of the nicest sounds in my library, due in part to the clarity of the D-50 but also to a method I've found to loop sounds cleanly and glitch-free while still retaining richness and character in the sounds. It is a way to get great samples quickly and without a visual editor.

Essentially, using mix mode, a one-page loop fades in near the beginning of the sound but is masked by the larger sample until the larger sample slowly fades out. This method works especially well for sampling patches from other synths, even those containing inharmonic partials like breathy or chuffy flutes.

To begin, boot-up with MASOS. You will sample on wave-sample 1 using all available memory (P60=00, P61=FF). Turn Mix Mode on (P28=on) and control the mix with the mod wheel (P35=00). (You will need to set P32 to 01 to avoid engaging the LFO.) To obtain the cleanest sample, set the sample time (P32) to 20 and from your source sample a G somewhere near midrange. When played back with the loop switch on (P65=on), the sample should fall into a one-page loop the same frequency as before the loop. If it does not, tune your source slightly and try again until it is near perfect. If it is an octave too low, sample a higher G.

Now begin to crossfade. Start by making the last 16 pages of

wavesample 1 become wavesample 2. (For a slower fade-in, use the last 32 pages.) Working on wavesample 2, set P60 to FO and P61 to FF. Now make all pages identical by setting P85 to FO and P87 to FF, and executing function 8 (replicate page). Turn the loop on and with the mod wheel forward you should hear a simple waveform similar in character to wavesample 1. If there is a click falling into the loop, rotate the wavesample (P19) until the click disappears, using function 8 after each rotation. (By rotating 16 samples at a time (P19=10), the click usually disappears after only a few tries.) Fade in this sample using function 2.

Going back to wavesample 1, move the mod wheel back and change P61 to EF. Fade out the last half or so by setting P85 to AO (this may vary) and P87 to EF and execute function 3. You should now hear wavesample 1 fade to zero. (Leaving the loop switch on sometimes makes for a quieter decay.) Change P35 to 01 and vary the mix using P34 until it sounds right. Wavesample 1 will now fade smoothly into wavesample 2. Use the envelopes for finishing touches.

Using this method of crossfade looping has renewed my interest in sampling with the Mirage rather than using factory and third party samples and has yielded some excellent results. ■

Ensoniq Performance Tour '88

Latest Dates

Ensoniq is putting their product specialists on the road with the entire line of Ensoniq synthesizers and samplers. Now's your chance to actually see and hear some of their new gear and ask questions. The following dates are arranged by city. Call the local sponsoring dealer to confirm the time and place.

CITY	DEALER/PHONE	DATE	CITY	DEALER/PHONE	DATE
Bryn Mawr PA	Medley Music, 215-527-3090	6/6/88	Simi Valley CA	World Music, 805-526-9351	5/5/88
Cleveland OH	PI Keyboard, 216-741-1400	5/24/88	Tacoma WA	Music World, 206-473-2120	5/3/88
Columbus OH	Coyle Music, 614-866-0544	5/4/88	Thousand Oaks CA	Instrumental Music, 805-496-3774	5/4/88
Dover DE	Earle Teat Music, 302-736-1937	6/8/88	Towson MD	P-Gordon Miller, 301-825-2558	5/17/88
Harrisonburg VA	Ace Music 'N Elect., 703-434-4722	5/31/88	Vineland NJ	M & M Music, 609-691-6611	6/9/88
Lancaster PA	Stephen Nicholas, 717-394-5639	6/7/88	Williamsport PA	Robert M. Sides, 717-326-2094	5/26/88
Lawndale CA	Guitar Center, 213-542-9444	5/17/88			
Lincoln NE	Paragon Music, 402-474-2234	5/17/88			
Lynchburg VA	Roberts Piano Co., 804-845-7257	5/18/88			
Nashua NH	Daddy's Junky Music, 603-888-1160	5/26/88			
Parkersburg WV	Wendell's Music, 304-485-4401	5/5/88			
Petaluma CA	Petaluma Music, 707-778-7171	6/14/88			
Portland ME	Daddy's Junky Music, 207-772-3239	5/24/88			
Richmond VA	Virginia Music, 804-282-4261	5/19/88			
Roseburg OR	Southbound Sound, 503-672-7056	6/21/88			
San Bernardino CA	Liers Music, 714-884-8815	6/7/88			
San Diego CA	Guitar Center, 619-583-9751	5/3/88			
San Rafael CA	Bananas At Large, 415-457-7600	5/24/88			
Santa Ana CA	Guitar Center, 714-547-6655	5/2/88			
Scottsdale AZ	Synphony Music, 602-945-0368	5/21/88			
Seattle WA	American Music, 206-633-1774	5/26/88			

So Whaddya Want For \$39.95?

No single product offers as many features as the MIDICASTER from the Midi Connection. That's because MIDICASTER is actually four products in one:

1. MIDICASTER IS A SYSTEM EXCLUSIVE DATA STORAGE DEVICE.

- MIDICASTER will read System Exclusive data from almost any device capable of sending it. This eliminates the need to purchase costly dedicated disk storage devices to store your synth patches, sequences, etc.
- MIDICASTER is very easy to use. MIDICASTER has been carefully designed to allow even the least experienced user to take full advantage of all functions - there is no need to learn arcane commands or hex programming.
- MIDICASTER supports most MIDI devices that have the capability to transfer sysex data - sequencers, drum machines, even synthesizers that require two-way communications, such as the Casio CZ synthesizers!
- Most importantly, MIDICASTER reads and sends files directly from disk, without disturbing the contents of the Mirage's memory. This means that you needn't re-boot operating systems when switching between data transfer to play functions on the Mirage. As a matter of fact, YOU NEEDN'T EVEN RE-LOAD SOUNDS ONCE AFTER USING MIDICASTER! Mirage sounds remain in memory even while you're using MIDICASTER!

2. MIDICASTER IS A DISK COPIER AND FORMATTER.

- MIDICASTER will format and copy an OS in a single pass - no more disk swapping when making backups.
- MIDICASTER will backup most known operating systems. Archive those important, non-standard OS's.
- MIDICASTER formats and copies WITHOUT DISTURBING THE CONTENTS OF MIRAGE MEMORY! You will not lose the sound currently in memory when you format a disk!

3. MIDICASTER IS A PERFORMANCE SETUP LIBRARIAN.

- MIDICASTER will record and send any kind of MIDI data at all - use it to send program changes to all the synths in your system at once, send all notes off commands, zero pitch and mod wheels etc., all without losing the sound currently in Mirage memory.
- MIDICASTER is the only product of its kind that will work with devices that use non-sysex data for setup, such as the Axxes Mapper™.

4. MIDICASTER IS AN IMPROVED MIRAGE OPERATING SYSTEM.

- MIDICASTER actually speeds up many Mirage functions - making parameter changes is noticeably quicker (MIDICASTER will not speed up disk load time).

YES! I've got to have my very own MIDICASTER! Enclosed is my check or money order for \$39.95 (allow 4-6 weeks for delivery).

My name is:

My address is:



Clark Salisbury & Erick Hailstone
7280 S.W. 104th, Beaverton, Oregon 97005

SOUNDSET I from SYNTAUR

Reviewed by Rick Hall

FOR: ESQ-1, SQ-80.
PRODUCT: Soundset 1.
PRICE: Set of 40 sounds (Mirage disk or cassette) for \$17.95.
FROM: Syntaur Productions, 11116 Aqua Vista, #2, North Hollywood, CA 91602.

A multitude of features at a very reasonable price is what has made the ESQ-1 the synthesizer of the common man. Many of those features, however, are the programming options that really define the immense capability of this instrument -- a capability which, alas, often goes unused by the average musician. This condition is due either to a lack of interest in using the instrument as a tool for sound invention, or, more probably in my estimation, a lack of education in how the programming functions actually work.

Well, nothing wrong with that... I myself do not usually spend the time to work up new sounds, being too busy making music instead. But I have made sure that I know how to create a sound when I need to, which is a frequent occurrence when one is involved with studio and commercial production work. Programming your own sounds may seem complicated, but on the ESQ-1 it's really a pretty simple affair in most cases. One of the most useful ways to learn how sounds are constructed is to look closely at some existing patches, with all the parameters available to see at once and maybe a little explanation thrown in as well...

Enter programmer Sam Mims of Syntaur Productions, a chap who has kept the needs of the common man in mind while coming up with a nice little potpourri of voices he calls his SOUNDSET I for the ESQ-1, ESQ-M, and SQ-80. The package consists of 40 sounds, primarily emulative (meaning that they try to emulate actual instruments such as strings, horns, etc.) and effects (telephones, sirens, crickets...). It is available in a number of formats for \$17.95. I used the cassette tape version and it loaded right up with no trouble. Included on the cassette was an audio version of the demonstration sequences, which were also included on the cassette as sequence data (if you want to play the demo sequences, you will need an expander cartridge).

What is really nifty about this collection, though, is the documentation supplied with the sounds. There is a soundsheet for each sound, and a short explanatory note detailing how the patch works. Consider the following entry on BSCLNT: "A solo bass clarinet is simulated by using square and pulse waves, with oscillator 2 synched to oscillator 1. ENV1 is applied to these oscillators to "scoop" the notes slightly. Breath noise is provided by OSC3. The mod wheel adds vibrato to the sound, and BSCLNT is panned just left of center (unmoving)."

In every instance, the information concerning these voices is useful and presented in the concise, readable manner shown in the above example. The data sheets are displayed next to the text and the parameters are set up in block diagrams which correspond to the ESQ's pages.

The voices themselves, 40 in all, are on the whole well-crafted. As always, there are some stand-outs... I liked the electric piano called DX PNO (described as "...the always-in-demand imitation of a DX7 imitating a Fender Rhodes piano...") and,

believe it or not, BANJO, which contains a very detailed account of how the patch was derived along with the pointed advisory "...This is quite a realistic patch, but the real trick is learning to pick like a bluegrass man.". Try making your keyboard play like a banjo and you'll see what he means.

Some of the simulated instruments I have heard done better, but I have not yet run across such useful documentation in any set of voices for the ESQ. In programming, just a little bit of informative explanation goes a long way towards increasing one's understanding of what you're hearing. These sounds are definitely worth the bucks, and with a little study this package can help you get a leg into the real excitement of the Ensoniq instruments.

See you in the Hackerpatch!

Bio: Rick Hall is a well-known -- some say notorious -- denizen of the Philadelphia music scene who keeps himself busy writing, performing, producing and recording with numerous ensembles of every conceivable nature, including his own R&B group DANIELS/HALL. He frequently sluffs off his serious obligations in order to go fly hot air balloons and indulge a passion for fiddle-making. He is in love with a large white dog named Lady. ■

ESQ-1 NEWS FROM HEAVEN

Each BBC series cartridge includes:

- *80 -160 original patches
- *Soundguide(TM)
- *One year warranty
- *Gold-plated edge conn.
- *Protective anti-static bag
- *SQ-80 Compatible.

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

SHOWDOWN PRICES

80 voice ROM	\$25.
80 voice EEPROM (RAM)	\$35.
160 voice ROM	\$45.
160 voice RAM/ROM	\$55.
160 voice RAM	\$65.
80 voice Data Cassette	\$14.95
80 voice Data Book	\$9.95
Demo Cassette	\$FREE

Due to our new facility and increased production staff, turnaround time is now less than 48 hours*.

CHOOSE HEAVEN

Thousands of cartridges sold already

To Order: Send check or money order to the address below. Add \$3.00 Shipping/Handling. CA residents add 7% sales tax.

Heaven
P.O.Box 2550
Saratoga, CA 95070 USA

For C.O.D orders call 408-554-2922 (24 hours).

*in most cases.

ESQ-1 (TM) ENSONIQ CORP.

Tips On Using The EPS

by Clark Salisbury

For those few, hardy souls out there who have actually purchased (or will do so soon) Ensoniq's new EPS, I have good news and bad news. The good news is, the EPS is one helluva machine. The bad news is, good luck using it.

First of all, remember the Mirage? Remember the big print, words-of-less-than-two-syllables "Musician's Manual" that came with the machine? Granted, the "Musician's Manual" was user-friendly. And user-useless. If you really wanted to know anything at all about how to really do anything with the Mirage, you had to purchase the "MASOS" manual (which, in itself never made it onto anyone's "easy reading" list. But then, it was never intended to be a "Musician's Manual").

I will grant that the rather thin volume provided with the EPS is a good notch or two above the first Mirage manual. And you can now get the "Real EPS Manual" for free, just by sending in your warranty card. No big deal. And I'd venture a guess that, with all the difficulty Ensoniq seems to have had getting the EPS's rolling off the conveyor belts, we can forgive them if, maybe, they kinda left the manual for last. At least I can forgive them.

Because the EPS is one helluva machine. It sounds GREAT. I've sampled everything from compact disks to drum machines to voices and basses and synthesizers and other samplers. And it really sounds superb. I hope I'm making myself clear here. The sound of the EPS is as good as any sampler I've used, and I work in a music store. And it loops things, too. Actually, it loops anything. Weird, chorused multi-layered sounds that would give any other sampling fanatic the cold sweats it loops without blinking (how do they do that?). And the sequencer is without a doubt the finest sequencer I've ever seen built into a keyboard. And nicer than most stand-alone units. You see, the EPS is one helluva machine. It does everything they said it would, and then a whole bunch of other stuff. It's just that, well, it might just be a teensy little while before you can get a manual that will tell you how to do all that other stuff.

Like, I was doing some multi-sampling with the EPS. Naturally, I wanted a nice sounding drum kit, since the one provided by Ensoniq didn't impress me that much. As a matter of fact, the whole "library" they sent with the EPS didn't impress me that much. One piano (and a bit on the harsh side at that). A string section - nice samples, but funny attack. Some Latin Percussion (who am I, Ricky Ricardo?) and a bunch of synthesizer sounds, for Hernando's sake. Classic, highly sought-after sounds like "Theme", "Pingz", and "Ice Spinner". What in the world is an "Ice Spinner" anyway? Never mind - after hearing the sample I don't think I care to know.

But you see, it doesn't matter! Because the EPS is one helluva machine. It samples anything. And so I was doing these multi-samples off a drum machine. Bass drum, snare drum, cymbal - and naturally I was assigning them to the keyboard. And it was great. You'd simply hit the "Keyboard Range" button and play the low note and the high note for the sample you were working with, and presto! There it was, right where you wanted it. Except that every now and then, I'd assign a sample, and all the other samples on the keyboard would disappear! Bummer. Then I found out that you have to pay attention to whether you're working with a "wavesample" or with a "layer" when editing on the EPS. Because not only can

you have as many as 127 samples across the keyboard, you can go up to eight layers deep for any range on the keyboard. And that's just for one instrument. And there are eight of those. Instruments, that is. And this is a very good thing. Except that if you inadvertently set the range for a layer to something like, say, one note (as I was doing, thinking that I was assigning a shaker sound to the F# key) you won't hear any of your other samples. So, (to quote the manual) don't do that.

As a matter of fact, there's probably a lot of little things like this that aren't really explained in the EPS "Musician's Manual". Of course, if you're a musician, you probably don't care about stuff like this anyway. You'll be having too much fun jammin' with the "Ice Spinner" sound. But for the rest of us, there may be a few little things not covered in the manual that will make life a LIVING BREATHING INFERNO OF WRONG TURNS, DEAD ENDS, AND MISPLACED SAMPLES. So in the spirit of cutting-edge do-it-yourself-ism that the Hacker has for so long embodied, I'll be giving you a few tips occasionally on how to get the most out of your new EPS. At least this will provide a bit of light diversion while you and I wait for the "Real EPS Manual" to arrive.

So herewith are this month's tips:

Tip #1: Send in your warranty card! It's the only way to get the "Real Manual".

Tip #2: If you can't find your warranty card, send in a facsimile that includes your name, address, and where and when you purchased your EPS. After all, Ensoniq doesn't really want the warranty cards back. They've already got lots of them. What they really want is to know who and where you are. Marketing and all that. If you're feeling particularly benevolent, send them your own demographic study on yourself along with your facsimile warranty card. Include your age, sex, income, taste in movies, where you can be reached in case of an emergency, and what you had for breakfast. They'll appreciate it.

Tip #3: Don't edit a wavesample if you mean to edit a layer, and vice versa. If you're not sure you know what I mean, don't edit.

Tip #4: Send the factory sounds that come with the EPS back to Ensoniq with a note saying "Ha ha! That's a good one. Now could you please send me the Real Disks?"

Tip #5: Buy stock in Sony, Maxell, BASF, or Fuji. Once everyone owns an EPS (and I'm quite convinced that everyone will own an EPS, eventually) there will be so much sampling going on that it wouldn't hurt to have a little money invested with a disk manufacturer or two.

After all, it's a helluva machine.

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

VALHALA PRODUCTS NOW MANUFACTURER DIRECT!

All VALHALA customers buy 'MANUFACTURER DIRECT'. There are no dealers or distributor profits added to the 'Manufacturer Direct' prices. We're different in that we both manufacture and sell our own products. By designing and manufacturing our own products we put all the quality in, but eliminate the biggest portion of the selling price, which is the dealer!

IT'S NOT THAT WE'RE CHARGING TOO LITTLE, YOU'VE BEEN PAYING TOO MUCH!



MACINTOSH SOFTWARE

(Not Copy-Protected!)

D-50 LIBRARIAN **TR81Z EDITOR/LIBRARIAN**
Only **\$69.00**

For either the TX81Z Editor/Librarian or the D50 Librarian.

New Mac Software Available May 1988

(Not Vaporware!)

D-50 Editor/Librarian \$129.00
(includes full MT32 support!)

MT-32 Editor/Librarian \$69.00
(Translates D50 voices to MT32 format!)

D-50 RAM MEMORY CARDS

RAM MEMORY CARDS

\$69.00 each

Buy 2 RAM CARDS only

\$65.00 each

Buy 3+ RAM CARDS only

\$60.00 each

For an additional \$10.00 per RAM CARD you can choose any one of four sound blocks from our STUDIO SERIES to be loaded into your RAM CARD when purchased from us.

D-50 CUSTOM ROM CARDS

CUSTOM ROM CARDS

\$35.00 each

We realize that you have many 'favorite voices' that you use on a regular basis. Why tie up a costly RAM card when you can now have a ROM card programmed specifically for yourself, with your favorite voices? VALHALA is pleased to offer this Custom ROM service at a price that seems just too good to be true!

To order a custom ROM, place all 64 voices in the order you prefer with your selected reverb types onto your RAM card & write-protect the card or place your voice bank onto a 3.5" Mac disk in the Valhala format and ship it to VALHALA. (Send SASE for full info.)

D-50 ROM MEMORY CARDS

ROM MEMORY CARDS

\$40.00 each

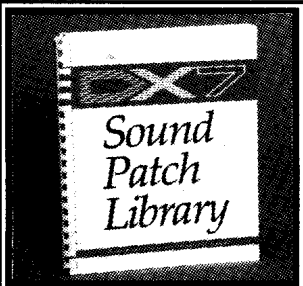
Introducing...

STUDIO SERIES™

256 new & exciting voices now available on our four STUDIO SERIES™ Sound Blocks.

- Top 40
- Analog
- New Age
- Orchestral

D50 Demo Cassette only \$3.50 pp.



Sound Patch Library™

\$29.00

- 757 different patches.
- Sound, algorithm & group indexes.
- 214 pages, spiral bound book.
- Compatible with the DX7II!

757 New TX81Z Voices

\$56.00 ea.

Available on Data Cassette or Mac disk for Valhala's TX81Z program.

Also 757 new voices for DX21, DX27 or DX100 available on data cassette for \$56.00 each.

757 DX7/TX7 Voices

\$56.00 ea.

Available on data cassette, DX7IIFD disks or Opcode Mac format and for the Commodore 64 formats: Sonus, Music Direct, Syntech or Passport.

Drum Rhythm Patterns

\$22.00 ea.

Data tapes available for: RX21, RX15, RX11, RX5, TR505 or TR707.

Our D-50 RAM Cards are 100% compatible with these new Roland L/A Synthesizers!



Our ROMS contain traditional sounds for use when playing live or recording, together with a collection of keyboard type sounds, such as Moog, OBX and Juno along with classic sound effects. Whether your tastes are 'traditional' or lean toward 'New Age', Valhala's the ultimate in sound support.

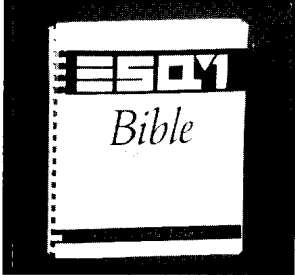
- Orchestral • Bass Guitars
- Percussion • Acoustic Pianos
- Electric Pianos • Woodwinds
- Brass • Sound Effects • Strings
- Synth Sounds • and many more!

- 80-Voice ROMS \$25.00 ea. (ROM 801, 802, 803 or 804)
- 160-Voice ROMS \$52.00 ea. (ROM 1601 or 1602)

320-Voice ROMS \$99.00 ea.

Valhala's 320 voice ROMS 3201 & 3202 contain all of our voices ready to load into your ESQ & SQ synths - for real creative power at your fingertips instantly!

Now Available: ROM 3202 with 320 more new & exciting voices!



ESQ1 Bible™ (Prog Ref.)
\$19.00

- Enhance your programming skills.
- Learn acoustic sound programming.
- Includes 40 patches explained.



Sound Patch Library™
\$25.00

Be one of the first to purchase the ultimate collection of 757 ESQ1 voices.

All prices/post subject to change without prior notice.

C64 Patch & Sequence Librarian for the ESQ1 \$65.00

The ultimate storage program for the Commodore 64 & ESQ1! Holds up to 12-banks of voices at one time for easy swapping/viewing. Store single or all sequence memory to disk. 100% Machine language program for super-fast and efficient program execution.

In summary, the ES1 program is a well-written and useful program.

Excerpt of review by James C. Chandler for Electronic Musician January 1988

D-50 MEMORY CARD GIVEAWAY!

GRAND PRIZE

3 RAM MEMORY cards and all four of VALHALA'S STUDIO SERIES ROMS!

Two SECOND PRIZE WINNERS

2 RAM MEMORY cards & your choice of two of our STUDIO SERIES ROMS.

Five THIRD PRIZE WINNERS

1 RAM MEMORY card & your choice of one of our STUDIO SERIES ROMS.

One Hundred FOURTH PRIZE WINNERS

1 CUSTOM ROM burned w/sounds from your own library of D50 voices.

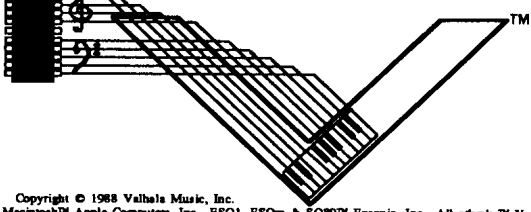
One entry per person / household - All entries must be received by June 10, 1988.

No purchase necessary. Print your name, address & phone number on a 3 x 5 postcard only & mail it to: **Box 20157-TH Ferndale, MI 48220**

VALHALA D50 Card Giveaway

Continental USA add \$3.00 S/H. Mich. add 4% sales tax. Alaska, Hawaii & Canada add \$7.50 S/H for Regular Shipping, \$12.00 for Air Mail. Other Countries add \$10.00 S/H surface, \$16.00 Air Mail + \$3.00 each extra item. Foreign pmnts must be in USA FUNDS drawn on a USA bank!

For full giveaway rules send a SASE to Valhala D-50 Rules Box 20157-TH Ferndale, MI 48220



Toll Free Number for VISA & MasterCard orders only: **1-800-648-6434**
Information requests, questions and customer assistance call: **1-313-548-9360**
Business Hours: Monday thru Friday 9am to 5pm EST

Flexible Extras From STD Productions and Gotcha Covered

Reviewed by Dave Caruso

FOR: All instruments using cartridge or disk drive.
PRODUCT: Highpockets.
PRICE: \$18.95.
FROM: STD Productions, Route 13, Box 3, Morgantown, WV 26505.

Of all the products I own for storing, carrying, or displaying disks or cartridges, I have nothing like Highpockets. I think its designer, keyboardist Mark Kimble, knew that his product idea was different, and perhaps better.

I agree with much of the design of Highpockets because it's practical and original. The most important feature for me is its ability to display 13 disks or ROMs in a vertical, 100% cotton pouch system while hanging directly on my synth stand. I see that as the biggest attraction to buying this product over another one. And, as Don Pardo would say, "But wait--there's more!"

It's machine washable (minus your disks), and attaches quickly and easily to almost anything. It has elastic straps sewn to the top, bottom, and middle of its thirty and three-quarter inch length. It folds up, with 35 disks inside, to a neat package that can be easily put in a briefcase, purse, shoulder bag, etc.

So much for that literature. Here's why I like Highpockets.

On an Ultimate Support Stand, my favorite choice of placement for Highpockets is over the 'A' frame, on the left side of the stand, close to the Mirage disk drive. This causes the long, flexible product to hang on the same angle as the post it hangs on, which I like. Now this beats the newer Mirage display "lip" or stacking shelf. Put the Mirage on a bit of an angle and start playing with velocity and your disks will start flying to the floor. Highpockets won't dump your disks. And although the older model Mirage lip won't dump disks as easily as the newer one, it doesn't hold as many disks as Highpockets.

When I leave the stage, I take my disks with me, whether it's between the soundcheck and the show or between two sets. Highpockets means I don't have to grab each disk individually and put them into a separate case (which I don't really have a place for onstage anyway), before I can walk off. That makes me the last guy offstage every night. With Highpockets, I can fold, lift, and go.

Highpockets is black, and therefore it doesn't call too much attention to itself onstage.

This is the only disk case I have that works equally well if I'm using 3.5-inch disks, quick disks, RAMs, ROMs, or several of each.

So, I recommend this product, with a few design exceptions. And since it is such a good product, let's take these exceptions and turn them into suggestions for a hypothetical "Highpockets II."

1. An optional spine to keep it flat. This could clip itself to the existing Highpockets, and store easily in a synth case, underneath the synth. Without this spine there is the tendency for Highpockets to slink to one side. Using plastic would keep static down and keep it lightweight.

2. Add Velcro to Highpockets, perhaps for the above application, but especially for folding it up. When you get to

the last fold, it would already be fastened closed.

3. I personally would've made the pockets deeper. I don't need to see much of the disk, and I would feel safer if I couldn't. I must admit that this is being picky, because a bit more than half the disk is inside the pocket, and with repeated bumping I couldn't spill a disk. Still, deeper pockets would look better for me and my multi-colored disks and labels. So while it isn't a very important consideration, neither is fitting over sixty disks in this product at once. I tested this (it was mentioned in the literature), and I will never need that many disks on my stand at once--not even for an audition. What I'm trying to say is that I'd have "deerpockets" before "widepockets."

4. An optional carrying strap, or at least built-in metal rings for this purpose (a camera strap would do). For portability and convenience, why not go all the way?

Overall, if Highpockets sounds like it fills a need for you, definitely get one. It's inexpensive, it comes with complete instructions for care and use, and it's "fully guaranteed for refund or replacement."

FOR: All Ensoniq instruments.
PRODUCT: Dust covers.
PRICE: Pre-Jan '87 Mirage and ESQ-1: \$17.25 (while supplies last).
New ESQ-1, new Mirage, SQ-80, EPS: \$37.50, (sale price \$24.75.)
FROM: Gotcha Covered, 22N159 Pepper Rd, Barrington, IL 60010,
(312) 382-3210/Toll Free: 1-800-822-1899.

Dust covers do more for you than keep dust off your equipment. They're water resistant (spills can be deadly to your equipment), and they look a heck of a lot better than those sheets you pile over your racks at the club.

I called Gotcha Covered Dust Covers Company at the above (toll free!) number and spoke to Gary Winder, vice president and general manager of the Band Instrument Division. He told me about the above sale prices, which were what he actually sold me on the product. I already knew I wanted dust covers, but I wasn't interested in paying thirty-four to thirty-seven dollars apiece for them. But now that I have them, I wouldn't do without them.

Gotcha Covered (hereafter referred to as "G.C."), makes covers for over one hundred different instruments, and they do custom orders. Now all of your drum machines, mixers, etc., can benefit from this kind of protection at a reasonable cost. Geez, I just had a terrible thought about a disaster outdoor show we had where the rain would sprinkle just a little, then go away, then sprinkle, then go away--with never enough rain for anyone to cancel the show. During a performance like that, any slave unit I wasn't playing but needed onstage could've been covered aesthetically during the performance.

Which brings me to another point. All of G.C.'s covers can be used without unplugging any headphone, MIDI, audio signal, pedal, or other kind of cords from the unit. They're made that way on purpose, with outlines sewn around these areas.

G.C. cases are made of a flexible vinyl-type fabric that allows you to fold it and put it right into your keyboard case with your keyboard so you can take it anywhere without needing an extra hand.

Another nightmare recalls the outdoor gig where the wind kept whipping the drop-cloth covers off the equipment before showtime. G.C. covers fit snugly around each instrument, because they're made especially for that instrument.

Their original ESQ-1 and Mirage covers have a window built into them where the display is, so you can cover the keyboard while in use without forgetting whether it's on or off. Newer G.C. covers don't have this feature, but if you like the idea you can custom order one. I especially like this idea because if I'm using an instrument as a slave, I don't need to touch it, but I do need to watch the display while I'm giving it MIDI commands.

The new G.C. covers are all the same color--black, with an orange stripe. Older covers were color-coded according to instrument make, and some of those are still available. Four-color catalogs allow you to see before you buy.

A few other nice features:

1. G.C. covers are completely American made.
2. G.C. takes MasterCard and Visa.
3. G.C. won't process your order until they ship it, so you won't be charged immediately for a purchase that's back-ordered for six weeks. There's a great company policy.
4. G.C. covers are completely guaranteed. ■

STILL VOICE AUDIO

MEANS

More Choices, More Quality Sounds
12 years of synth programming experience
Mix and Match your choice of sounds.....

NO TWEAKS , NO FILLER, NO HYPE , JUST:

NEW 180 VOICE ROM (VOICES 1-180)	\$55.00
80 VOICE ERASABLE RAM (ANY 80) \$55.00
NEW 80 VOICE SQ-80 ROM (SVA-1) \$30.00
40 VOICE CASSETTE (ANY 40 SOUNDS)...	\$15.00
SQ-80 MICRODISKS (ANY 80)	... \$25.00
SOS C-64 LIBRARIAN DISK (ANY 40)	.. \$15.00
AND YES, PATCH SHEETS (ANY 40)	... \$15.00
ESQ-1 OR SQ-80 DEMO TAPE \$3.00



STILL VOICE AUDIO
3041 Sumter Ave. So.
St. Louis Park, MN 55426
(612) 927-0451

ESQ-1, SQ-80, and ENSONIQ are TM ENSONIQ Corp.

MUG

INTERNATIONAL MIRAGE USERS GROUP

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

- 1 Year Membership \$20 (\$30 outside U.S.A.) includes 1 FREE Disk.
- Lifetime Membership \$65 (\$75 outside U.S.A.) includes 2 FREE Disks.
- M.U.G. Sounds Demo Cassette \$10
- Mirage Techniques Video Cassette Volume 1
\$19.95 for members \$29.95 for non-members (+ \$3.00 shipping)



SEND TO:

M.U.G.
G-4 Productions
622 Odell Ave
Yonkers, New York 10710
MUG Hotline 914-963-1768

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (include area code) _____

Playing Between The Keys

Inside the "Q" Chip

by Dick Lord

Some of you may be old enough to remember the last time an article appeared under this title. After a somewhat premature sabbatical, we are back together again. For those of you too young (or forgetfull!) to remember, this is the place where we look "under the hood" of Ensoniq's machines to find out what makes them tick, even if that means going slightly beyond the scope of the "Musician's Manual." If you're brave enough to venture into the uncharted waters of reverse-engineering, we will attempt to explore those realms that apparently are considered too secret and sacred for mortal consumption.

The topic of this month's article is Ensoniq's special piece of custom silicon, officially known as the 5503 Digital Oscillator Chip (DOC), but also known as the "Q" in Ensoniq. The same DOC (or "Q" chip) is the heart of all of Ensoniq's products except the EPS (which has a new DOC-II.) This one 40-pin custom IC is what makes an Ensoniq keyboard unique. It's one of the few parts in a Mirage or ESQ that you can't buy at Radio Shack.

Although the details of its inner workings do not appear in the "pamphlet" that comes with your DSK, the intrepid explorer may note that Ensoniq was kind enough to supply this chip to owners of the Apple II-GS. This is fortunate, because II-GS programmers obviously want to know how to do more than make a beep with their machines. Chapter 6 of the SYBEX book, INSIDE THE APPLE IIGS by Gary Bond, gives a fairly complete description of the 227 registers that make the DOC perform. For those who wish to go beyond the scope of this article, I recommend getting your hands on this book.

Before we plunge into the details, let's examine the concepts behind digital oscillators. Figure 1 shows the basic idea. A digitized waveform is stored in some form of waveform memory. An address generator supplies the location of each sample. The sample data is read from the waveform memory and sent to a digital-to-analog converter to produce the analog output. The address generator may be nothing more than a counter which simply steps through the memory. To change pitch in such a simple system, you would simply change the clock rate. Unfortunately, this scheme does not work as well when multiple oscillators are sharing the same wave memory and randomly competing for access. It also is not clear how one generates all the different clock rates.

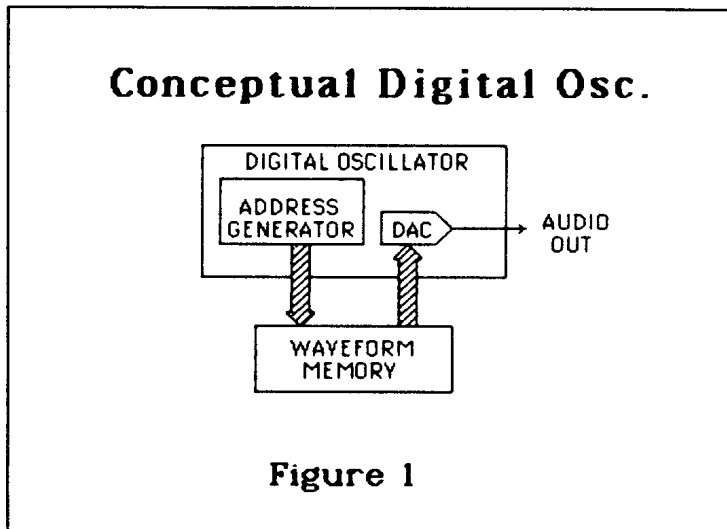
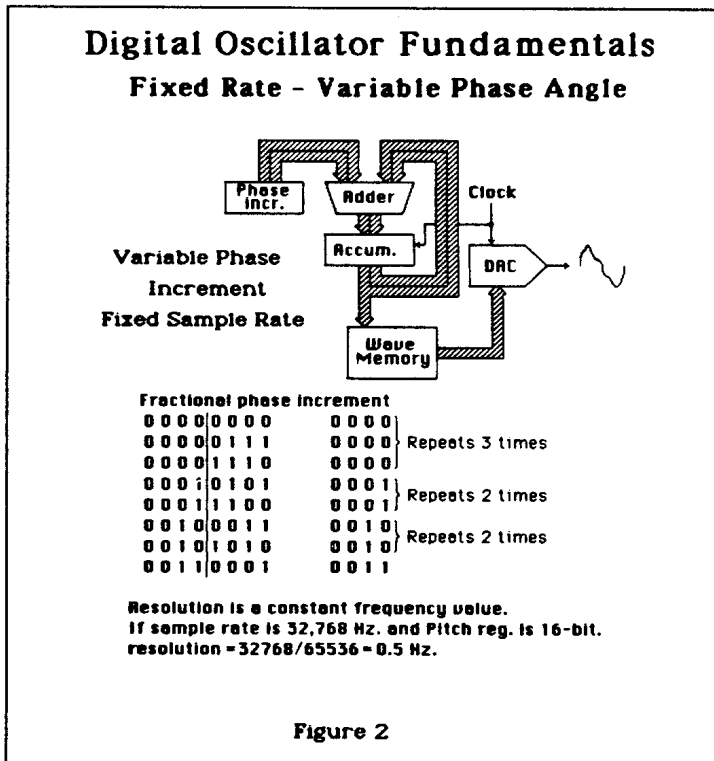


Figure 2 shows a different approach to producing the waveform. Here the address generator doesn't necessarily step consecutively through the wave memory. Instead, the address is formed by repeatedly adding an increment to the previous address. The address can be visualized as the phase angle of the sample. The phase angle is stored in an accumulator and may have more resolution than is presented on the address bus. The fractional part of the phase angle is kept to give finer control. Playback sample rate is constant in this design and pitch is controlled by the value of the increment.



The phase increment oscillator concept assumes that the waveform will not be seriously damaged if a sample is occasionally repeated or skipped. If there are enough samples in the wave, the data probably will not change too rapidly between adjacent samples and this irregularity won't be noticed. This assumption is not always valid in waves where there are sharp transitions. That is why some Mirage samples sound OK on one note and whine on an adjacent note. (The new DOC chip in the EPS cures this problem by fetching two adjacent samples and interpolating between them to derive the data.)

Though phase incremental oscillators suffer from this sampling imperfection, they are very easy to build. Figure 3 shows how the concept is extended for multiple oscillators. The phase angle accumulator and increment register (i.e. pitch register) of Fig. 2 are replaced by memory blocks with a location for every oscillator. As each oscillator gets its slice of time, its phase increment register is added to its accumulator. The address is presented to the waveform memory and the sample is converted and sent to the appropriate output. We might want different oscillators to have different waveforms, so each oscillator also has a page latch (or a base pointer) that selects what part of wave memory the sample will come from.

Playback sample rate for each of N oscillators is simply the clock rate divided by N.

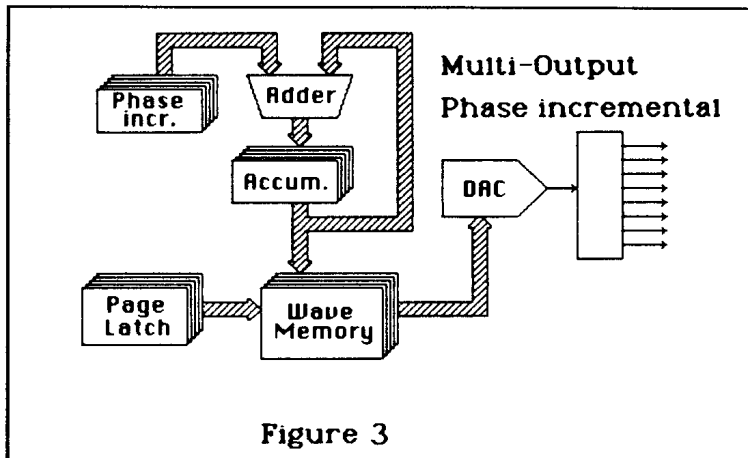


Figure 3

It is not too far a leap from the ideas in Fig. 3 to the block diagram of Fig. 4. This is my concept of what I believe is inside the DOC. Since it is considerably harder to reverse engineer silicon, I can't guarantee that this is a perfect model. The DOC has 32 oscillators worth of registers, though not all of them are always used. In the ESQ-1 only 24 are activated.

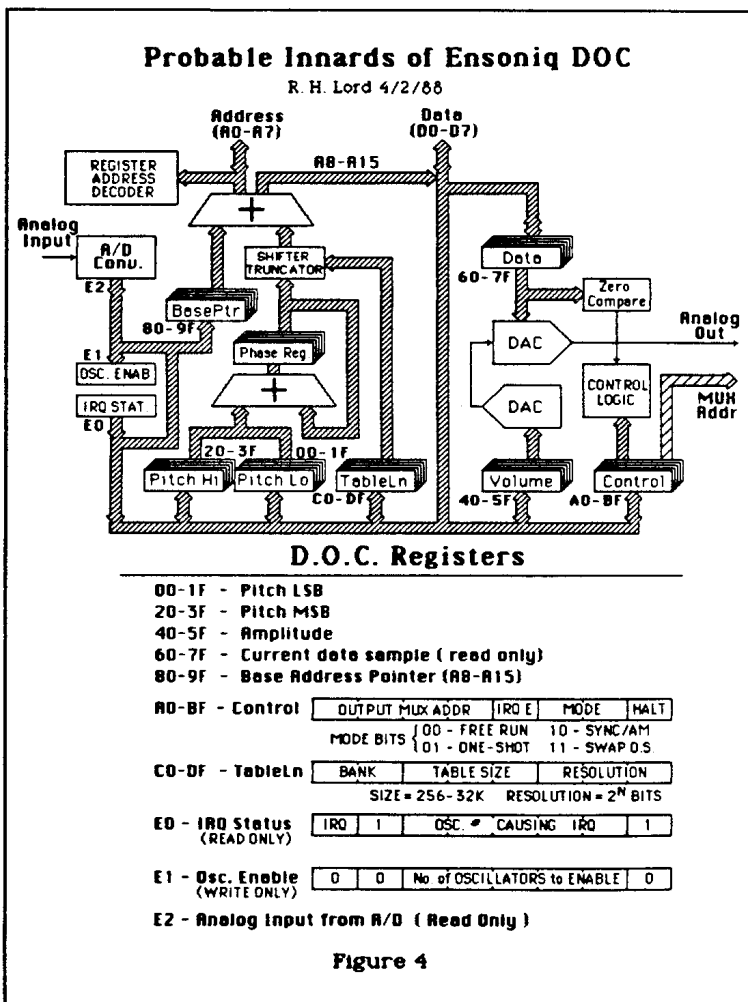


Figure 4

Our old familiar adder and phase angle register appear again at the lower left. The phase increment register is now 16 bits in length and split into pitch low-byte and pitch high-byte registers. There are 32 registers in each group, one for each oscillator. The pitch low-byte registers appear at chip addresses 00 through 1F. For the hacker these are decoded into address

space at EC00-EC1F in the Mirage and 6000-601F in the ESQ-1. Registers are accessed by chip selecting the DOC and placing the register address on A0-A7. The data then is read or written on the data bus. The high byte of the pitch appears at 20-3F. The phase angle data then enters a block that I call the shifter/truncator, which is controlled by the table length registers (C0-DF) to determine table length and resolution. The output of this block is then added to a base pointer (80-9F) to allow waveform selection.

The final 15 bit address is combined with the two MSB's (bank select bits) of the table length registers to form 16 bits of address output and an upper/lower bank select. The 8 LSB's of the address are sent out on dedicated address lines A0-A7. The MSB's appear on the data bus (D0-D7) during the first part of a DOC memory cycle and are latched externally.

Data fetched from the waveform memory returns on the data bus and is loaded into data registers (60-7F) for the output DAC. This is a multiplying DAC and its output level is determined by a reference voltage that is controlled by an amplitude DAC driven from the volume registers at 40-5F. The output can then be steered to the appropriate analog filter by an external multiplexer controlled by the MUX address stored in the 4 MSB's of the control registers (A0-BF.) Though the Mirage and ESQ assign each MUX output to fixed groups of oscillators, this is done in software and is not cast in concrete by the hardware design.

Figure 5 shows my speculation of how table length and resolution are controlled. My guess is that the internal phase angle accumulator is 22 bits long (PA0-PA21.) A barrel shifter, controlled by the resolution bits of the table register, supplies 16 bits to a truncator where the cycle length is determined by cutting off MSB's. The oscillator table length can then be set to any binary value from 256 to 32,768 samples (1 to 128 pages).

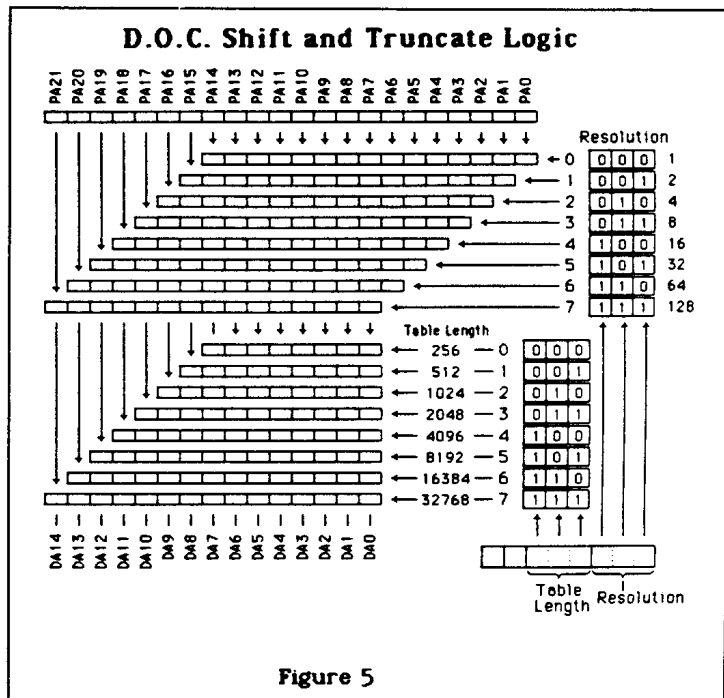


Figure 5

Two interesting problems arise from this design. First, the table length is limited to 32K bytes. A 64K sample requires two oscillators for playback. The first plays the first 32K. When it finishes, a second oscillator (with an offset base pointer) plays the remainder. The second problem is more complex. Not all samples are going to have lengths that correspond to nice binary multiples. How does the DOC know when it has reached the end of a 400 byte sample?

Without another 64 registers available to store a 16-bit end address for each oscillator, Ensoniq was stuck having to find another alternative. Their solution was to limit the analog data to 255 levels of output and to reserve data word 00 as a stop flag. (When you sample, all 00 samples get replaced with 01's.) For our 400 byte sample, the table length is set to 512. When a 00 is detected in the 401st byte, the oscillator cycle is terminated. With some combinations of resolution and pitch increment it is possible that the 401st sample might be skipped. This is why samples must have at least eight consecutive 00's to terminate reliably.

What happens when an oscillator terminates its cycle? This is determined by the mode bits in control registers A0-BF. In the free-run mode, the oscillator just starts again and repeats the cycle. In the one-shot mode it halts and must be re-started by software. In the swap mode, it is paired with the adjacent oscillator. When the first oscillator finishes, the second oscillator begins. It then starts the first oscillator again.

The final sync/a.m. mode looks at pairs slightly differently. Half the oscillators do sync mode and the other half can be amplitude modulated. In sync mode, both oscillators free-run, but the synchronized oscillator gets re-started whenever its pair completes its cycle. In A.M. mode, the output of one oscillator is used as the reference input for the second oscillator in place of the amplitude DAC input. The output of the second oscillator is multiplied by the output of the first.

The micro-computer that sets up the registers for the DOC needs to know when an oscillator completes its cycle. The interrupt enable bit in each register's control bit can be set. When the oscillator reaches the end of its cycle, an interrupt is generated. The computer then looks in status register E0. If

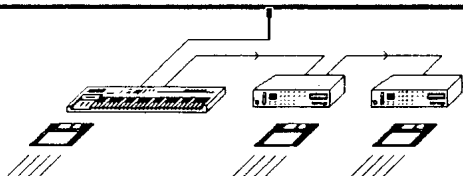
the MSB is set, the interrupt was from the DOC chip. The number of the oscillator causing the interrupt appears in the LSB's. Note that this is shifted one bit to the left. This allows the oscillator number to be used as an offset into a 16-bit vector table so that the interrupt can be vectored. Reading the interrupt register clears the interrupt. If the oscillator is operating in one-shot mode, it also is halted and the halt bit is set in its control register. It is re-started by writing a 0 to the halt bit.

Finally, register E1 is used to set the total number of oscillators that are usable. The playback sample rate is determined by how many oscillators are activated by this register. Register E2 supplies the data from the analog input pin. This A/D is used both for sampling and for digitizing the input from the pitch bend and mod wheel controllers.

This is certainly a whirlwind tour of the apparent operation of the DOC. There may be a few subtle points that I haven't yet uncovered, so hackers are on their own from here but this complex part is certainly the most interesting device in the Mirage, ESQ or SQ-80.

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

Turbo-Charge Your MIRAGE™



The Powerful New

MIRAGE™ Super-MIDI Disk

MIDI volume controllers for upper and lower
Assignable for each sound program and saved on disk

Use with the new MIDI wind instruments

Sostenuto pedal - MIDI or using sustain pedal

All controller inputs and outputs assignable

Separate MIDI transmit / receive channels

Single button program stepping "All notes off" PANIC button

Optional MIDI controllers to Local ±2 Octave pitch transpose

MIDI Overflow mode for 16 note polyphony

--- all this and more ---

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

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

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

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

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



Micro-Tonal Scales

Wendy Carlos' Alpha, Beta, Gamma

Create your own - Save them on disk

UD-1 for Mirage™ \$39.95 + 2.50 shpg.

Hack Your Own OS

Use your computer to make your own version

OS-1 Monitor Disk \$39.95 + 2.50 shpg

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

VISA (603) 659-2721 MC

Bennett Rd., Durham, NH 03824

Mirage Drum Machine Sequencer

By Nathan Miles

After I bought my Mirage and the factory sample diskettes I had in my possession some great drum sounds and no reasonable way to turn them into a credible rhythm track. Adding an external MIDI sequence recorder would give me the functions I needed but would cost a few hundred dollars more than I had available (available funds stood at \$2.34 last time I checked). Fortunately, I discovered that with a little software hacking the Mirage itself was able to produce the kind of sequencing I needed.

In this article I'll cover the operation of the sequencing software I designed and the instructions for loading it into your Mirage with either LEAPING LIZARD'S Mirage Monitor or UPWARD CONCEPTS' Monitor Disk. (For a copy of the 6809 assembly language source for the sequencing software and a description of how it functions internally, send an IBM-formatted disk and \$3 for p/h to Nathan Miles, 1905 S. 30th., Terre Haute, IN 47803.)

ENTERING THE SOFTWARE

This section tells how to add the drum machine sequencing software to an OS 3.2 diskette. The following listing can be entered with the '.addr' command using the LEAPING LIZARD'S monitor or with the 'M' command if you are using the UPWARD CONCEPTS' monitor.

```
Addr/Memory Contents
94A7 B6 80 8B 81 32 10 2F 02
      50 B6 80 8B 80 32 4A 48
      5F C3 1C 00 1F 01 B6 80
      AE 81 12 10 27 02 AB 16
      02 85
9700 8E B8 0B 10 8E B8 0B A6
      84 84 80 27 21 A6 84 81
      80 26 09 8D 2C 10 BF B8
      06 39 12 12 81 81 26 04
9720 30 02 20 E3 81 E0 26 0A
      A6 3F 8B 08 A7 3F 30 03
      20 D5 8D 0D 6F 3F 20 CF
      EC 84 ED A4 30 02 31 22
9740 39 EC 84 ED A4 A6 02 A7
      22 30 03 31 23 39 10 BE
      B8 06 10 8C B9 FF 23 05
      CC B6 9E 20 11 10 8E B8
9760 00 EC A0 ED 80 10 8C BA
      00 26 F6 39 12 12 DD B3
      39 A6 01 81 39 27 05 CC
      2A B6 20 F2 7F B8 0A 10
9780 BE B8 06 31 3D 30 0B 10
      8C BF 00 23 05 CC B6 9E
      20 DC A6 84 81 80 27 0C
      81 81 26 04 8D 9A 20 E7
97A0 8D 9F 20 E3 8D 9B 10 BF
      B8 06 39 12 12
```

After entering (and double checking) the code it must be saved to a disk. Don't use your most precious sample disk or only copy of the WHIZ-BANG II operating system disk. A newly formatted disk would be a good safe choice. The LEAPING LIZARDS monitor will save the entered code via the '^S', Save Operating System command. To save the code with the UPWARD CONCEPTS' monitor use the following commands:

```
x 9400 95ff 1000 "Relocate code to buffer"
w 00 05 y "Write buffer"
x 9600 99ff 1000 "Relocate rest of code"
w 01 00 y "Write buffer"
```

RHYTHM PATTERNS

One technique drum machines use to enter rhythm patterns is "step time" entry. In step time entry you punch in all the notes you wish to play on the current beat and then hit another button to advance a small step (usually a 16th note) forward. We can use the top key of the Mirage keyboard, that is the C which is usually 3 octaves above middle C, to emulate the step-forward-in-time button of a drum machine.

For example if we wished to create a rhythm pattern with bass drum hits on beats 1 and 3, and snare drum hits on beats 2 and 4, we could enter the following:

```
<SEQ Rec> <SEQ Rec> "Enter record mode"
BD / / / / "Enter bass drum, advance 4 1/16 notes"
SD / / / / "Enter snare hit, advance 4 1/16 notes"
BD / / / /
SD / / / /
<Cancel> "Cancel sequence recording"
```

Where: BD = Key which plays bass drum in current sample
SD = Key which plays snare drum in current sample
/ = Top key, C, on keyboard

If we'd like an additional bass drum hit on "2 and" and closed high-hat (CH) hits on every 1/8 note we'd enter:

```
BD CH / / CH / / SD CH / / BD CH / /
BD CH / / CH / / SD CH / / CH / /
```

It doesn't matter what timing we use to enter this sequence because the next step is to use the rhythm pattern command built into this software to adjust the timing. To change what we entered to the proper timing use the following command button pushes:

```
<Param> 5 0 <SAMPLE Upper>
```

This command sequence will cause the drum machine sequence software to execute and transform the timing of what we entered into perfectly executed beats. In the process the top key notes we entered are removed. This command only takes a few thousandth's of a second to execute so don't be fooled into thinking nothing happened when you pressed the <SAMPLE Upper> key. Press the <SEQ Play> button and you should hear the entered rhythm pattern played in real time.

After a sequence is built, it may be saved for later use either through the standard Mirage sequence save commands or the commands described in the next section.

BUILDING SONGS

It would be possible to use the rhythm pattern section to enter an entire song but it would be a very tedious and error prone process. That's why most drum machines have another level of capabilities which allow predefined rhythm patterns to be joined into songs.

This sequencing software allows you to define up to 39 patterns and join them together into a song. The patterns are numbered 51 through 89. Each pattern may be up to 150 notes long.

To save a pattern for later use, enter it as described in the previous section and play it to verify that it sounds right. Enter the following command button pushes to move the sequence to the desired save location:

<Param> x x <SAMPLE Lower>

Where 'x x' is any parameter from 51 through 89.

If the pattern is longer than 150 notes, the display will read 'SE' (Sequence Error) and the pattern will not be saved.

The patterns are actually stored in the area of Mirage memory normally used to store wavesamples for the lower keyboard half. This has its good points and its bad points. The good news is that you can make a permanent copy of the patterns you create by using the standard Mirage Parameter 11 command to save the lower sample area to an unused sample slot (1-3) on your disk.

The bad news is that the saved patterns will probably overwrite a portion of your lower keyboard sample. This is not a major problem since the patterns are only stored in lower waveform memory temporarily while you are building the completed sequence. After you have completed building the sequence, simply reload your lower wavesamples using <LOAD Lower>.

You may incrementally build up a collection of rhythm patterns by loading your previously saved patterns using the <LOAD Lower> button, adding your new pattern, and then saving it again using the standard Parameter 11, Save Lower, command. Don't forget to reload your lower drum sample after saving the pattern area.

To create a song out of predefined patterns, first clear the sequence area by pushing:

<SEQ Rec> <SEQ Rec> <Cancel>

Now you may append patterns one-at-a-time to your sequence by entering:

<Param> x x <SAMPLE Upper>

Where 'x x' is any number from 51 through 89.

If you wish to append the same pattern multiple time to your song, you only have to enter the number the first time. Thereafter, pushing the <SAMPLE Upper> button will cause the same rhythm pattern to be appended again.

If you have not yet created rhythm pattern 'x x', the display will read 'nS' (no Sequence) until you press cancel. If appending the sequence would cause the Mirage sequence area to overflow, the display will read 'SE' (Sequence Error) until you press cancel.

After you have built the song, it may be saved using the standard sequence save commands.

USING THE SOFTWARE

I've had a lot of fun with this software using the 102 sound disk which comes standard with the Mirage and has a sample with a bass drum, snare drum, and closed high-hat in the lowest three keys of the keyboard. I enter a basic rhythm pattern using the sequencing software and then jam against the rhythm track as the Mirage sequencer plays it.

In some cases you might want to use this sequencing software to create just a basic rhythm pattern on the bass and snare drums and then use the Mirage sequence overdub commands to go back and add the high-hats, cymbals, and tom-toms.

Bio: Nathan Miles is a programmer/would-be-musician whose keyboard career is in decline having peaked out when many years of intensive practice yielded a reasonably recognizable rendition of "Chopsticks". About him it can truly be said, "Of all the people in the world, he's one of them." ■■■

Voice patches designed specifically for Modern Rock and New Age music.

SH-01

ROM CARTRIDGE FOR THE ESQ-1

80 VOICE ROM CARTRIDGE

by

SOUND HOUND

"Those of you still nosing around for quality craftsmanship at an affordable price, look no further."

RICK HALL
TRANSONIQ HACKER

\$32.50

plus 2.50 for shipping and handling

5339 Prospect Rd. Suite 141
San Jose, CA 95129 408-866-0805

"If you like adventure and the excitement of exploration, then stop reading this review and order as many sounds as you can afford from **SOFTWORX**."

Chris Barth, Transonic Hacker Review

MIRAGE AND DPX-1

50 DISK LIBRARY	
INDIVIDUAL DISKS -	\$7.50
10 DISK SET -	\$60.00
50 DISK SET -	\$225.00

ESQ-1 SQ-80

THE "WORX" 1720 SOUNDS

(43 SOUND SETS OF 40) FORMATS AVAIL.
SQ-80 DISK MAC (BLANK SOFTWARE)
IGUANA DISK COMMODORE (BLANK
SOFTWARE & MUSIC DIRECT)

\$99⁰⁰ for 1720 SOUNDS

TR505, TR707, & JX3P; ESQ-1 & Mirage, DX100/21/27/27S, Macintosh, EMAX, and The Worx are trademarks of Roland Corp.; Ensoniq Corp.; Yamaha International Corp.; Apple Computer, Inc.; E-MU Systems, Inc.; and Softworx Midi Systems, respectively.

SEND FOR OUR FREE CATALOG



REFERRALS AVAILABLE UPON REQUEST

8402 Clover Hill Loop • Bayonet Point, FL 34067 (813) 862-8032

"SETTING THE STANDARDS"

Libraries also available for the following: Roland JX3P, Roland TR505, Roland TR707, Yamaha DX100/21/27/27S and Emax. Also 1000 Sound Cassette Sampler.

REMOTE CONTROL: ESQ-1

C&M Research Group Presents: Remote Control: ESQ

Features:

- Patch editor/librarian
- Up to 26 banks in memory at once
- User-friendly commands
- Graphic patch editor
- NOT COPY PROTECTED!
- Sequence librarian
- Built-in help
- Powerful macro language
- Free product support
- \$89.95 suggested retail

Remote Control: ESQ is a patch editor/librarian for the Ensoniq ESQ-1, ESQ-M, and SQ-80 for use with the IBM family of computers. It was written to give the musician more time for creative pursuits. Mouse and printer support for easier use.

Requires:

- MPU-401 (or compatible)
- IBM PC/XT/AT (or compatible)
- 256k of RAM
- Compatible with all displays
- Works on floppy or hard drive

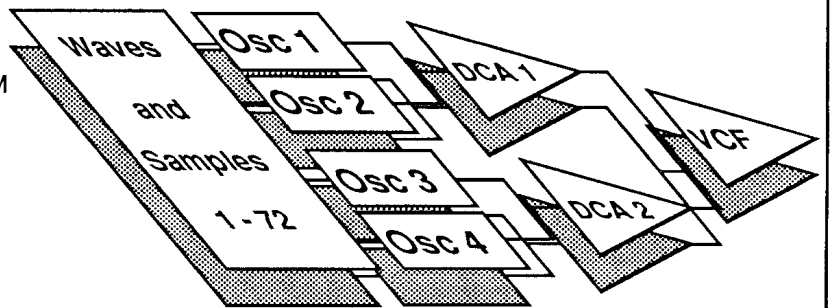
For more information contact:



C & M RESEARCH GROUP
302 RIDGEHAVEN PLACE
SAN ANTONIO, TEXAS 78209-3424

ESQ-1 is a registered trademark of Ensoniq Corporation. IBM is a registered trademark of International Business Corporation. **DEALER INQUIRIES INVITED.**

Soundprocess™



Digital Synthesizer for the Ensoniq MIRAGE

- **New** Mirage Operating System! - NO hardware mods
- Combines the power of SAMPLING with SYNTHESIS
- 48 internal sounds per bank • 72 user-loadable waveforms
- 16 channel MULTI-TIMBRAL sound control thru MIDI

Soundprocess System Disk....\$245

Soundprocess Demo Disk....\$5



Box 395 Grand Island New York 14072

Ensoniq and Mirage are trademarks of Ensoniq Corp.

Hackerpatch

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 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 in Erick Hailstone's "Hacking Part" and comments by Sam Mims - our resident patch analyst. If you send in a patch, *PLEASE* include your phone number.

The Hacking Part...

PROGRAM: UPRITE (by Brian Williams)

This sound works fine as an upright bass. OSC1 and 2 are tied together using amplitude modulation to create the main body of the sound. OSC3 creates the thunk attack. Many different bass sounds can be created from this one patch by altering OSC3 to simulate different types of attacks or to change the primary sounds.

For example:

1) Change the following OSC3 parameters : OCT=-1, FINE=4, WAVE=SQR2. Change the following DCA3 parameters: LEVEL=63, MOD1=ENV3, DEPTH=63. The sound that results is more synthetic with the fine tuning giving a chorusing effect.

2) Starting with Brian's patch, change the following OSC3 parameters: FINE=0, WAVE=BELL. Select DCA1 and 2 and change MOD2 to OFF. We now have a digital bass sound. Try tuning OSC3 in different ways using OCT, SEMI, and/or FINE.

3) Starting with Brian's patch, change the following OSC3 parameters: OCT=-3, FINE=0, WAVE=KICK. Select DCA1 and 2 and set the LEVEL parameter to 0. Select the MODES page and turn the AM (amplitude modulation) OFF. Select ENV2 and change T2 to 0. If you want to hear more attack, turn MOD1ON, OSCs 1 and 2 down.

SQ-80 Modifications

Let's start with the obvious. Take advantage of the SQ-80's aftertouch. Set LFO1's MOD=PRESS. Now you can control vibrato with pressure. Select OSC1 and change MOD2=PRESS. When you apply pressure you now get a slight detuning effect.

Start with Brian's patch. Follow the directions in #3 above for the ESQ-1. Now, select OSC3. Try selecting the drum waveforms. Try the following - THUMP, PLUNK, PLUCK, PLINK, SLAP, PICK1, and PICK2. If you want to hear more of the attack waveform, turn MOD1 down on OSC1 and 2. The way things are set at the moment, ENV2 is controlling DCA3, the attack waveform. Select DCA3 and turn MOD1 and MOD2 off. Use the LEVEL control to set the amount of attack waveform you wish to hear.

That's it for now. As always, if there are specific sounds or instruments you would like to hear about, drop me a line.

Erick Hailstone.
The MIDI Connection

The Patching Part...

PROGRAM: UPRITE

by Brian R Williams

This is an acoustic bass type of patch that I use when the Mirage is busy doing other things. It is meant to be used as a split program with piano or vibes, etc. since the upper range is not particularly useful.

[Sam Mims: This is an interesting patch. It has the flavor of an upright acoustic bass, with the strength of an electric piano. I prefer not to detune OSC 3 so much; I set FINE to 10. Don't ignore the top range, though - it could be useful as a tuned percussion effect.]

PROGRAM: TYMPANI

by Tim Edwards

Don't be fooled by the SQ-80s TYMPANI sound - drum waveforms don't always make the best drums. This sound has a limited range in the bottom two octaves of the keyboard, but it sounds good there. I use my Control Voltage pedal to do drum rolls. If you don't have a pedal, just change the four occurrences of PEDAL to WHEEL. Do a roll by starting a trill with the pedal (wheel) all the way forward, then slowly roll back to zero.

[Sam Mims - This is the best of many attempts I've heard at imitating a tympani. I prefer using NOISE 2 on OSC1 for a more pitched sound with less "bang" - but this is strictly a matter of taste. Also, try editing out the "Also Sprach Zarathustra" (2001) effect by leaving the SPLIT/LAYER, LAYER, and SPLIT turned OFF.]

PROGRAM: NIGHT

by Greg Lief

This is an odd texture with the mod wheel enhancing the stereo pan effect. I suggest trying all five formants for OSC 3, depending upon the effect you want to achieve.

[Sam Mims - This is a nice sound in that catch-all "new age" category. I like FORMT 1 best on OSC 3, but nearly every waveform works well, giving many interesting effects. I prefer speeding up LFO 3 to 21 or so, for more of a "shimmer" in the panning.]

PROGRAM: Y-BASS

by Pat Finnigan, The Big Picture Co.

Here's a bass patch that's a cross between two popular DX-7 sounds. OSC 2 is used in the same way as a coarse fixed frequency control in FM programming, adding the "spank" to the sound. The KEYBOARD parameter on the FILTER page will emphasize and sustain this overtone at higher settings. Never boil those Rotosounds again...

[Sam Mims - A good way to control the slap of the sound is with the LEVEL of DCA 2. The sound only works on the bottom 1-1/2 octaves, but it's a nice bass patch. To make a resonant synth bass, try playing with FREQ and RES (Q) on the FILTER page; settings of 17 and 19 respectively work well. For a neat African-sounding percussion/bass, simply switch MOD 1 to ENV 2 on the FILTER page.]

ESQ-1 PROG: UPRITE BY: BRIAN WILLIAMS

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	SQR2	OFF	-	OFF	0
OSC 2	0	0	0	OCT5	LFO1	1	OFF	0
OSC 3	0	0	21	SINE	OFF	-	OFF	0

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	ENV3	63	ENV2	63
DCA 2	55	ON	ENV3	63	ENV2	63
DCA 3	0	ON	ENV2	63	ENV2	63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	0	1	20	ENV3	63	KBD	-19

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

	FREQ	RESET	HUMAN	WAY	L1	DELAY	L2	MOD
LFO 1	22	OFF	OFF	TRI	0	0	0	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	60	23	2	0	21	3	21	20	12	57
ENV 3	63	46	45	29	0	0	31	35	20	51
ENV 4	63	28	28	6	63	1	45	54	16	63

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

SPLIT/LAYER	S/L PRG	LAYER	LAYER PRG	SPLIT	SPLIT PRG	SPLIT KEY
ON		OFF	-	UPPER	PIANO1	60

ESQ-1 PROG: TYMPNI BY: TIM EDWARDS

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-3	0	0	NOISE1	ENV2	32	OFF	-
OSC 2	-3	0	3	NOISE2	LFO1	63	OFF	-
OSC 3	-2	6	0	OCT+5	OFF	-	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	63	ON	LFO3	28	PEDAL	-13
DCA 2	63	ON	LFO3	28	PEDAL	-13
DCA 3	63	ON	LFO3	28	PEDAL	-13

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	23	0	0	PEDAL	-23	ENV1	63

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

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	63	OFF	OFF	NOI	63	0	63	OFF
LFO 2	-	-	-	-	-	-	-	-
LFO 3	40	ON	ON	SQR	0	4	63	OFF

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	60	23	35	20	0	0	32	47	36	0
ENV 2	-63	-63	-63	0	0	0	63	63	63	0
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	63	35	35	14	0	0	30	39	32	0

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

SPLIT/LAYER	S/L PRG	LAYER	LAYER PRG	SPLIT	SPLIT PRG	SPLIT KEY
ON		PNOSTR	ON	OB BRS	UPPER	3 TRUMS 60

ESQ-1 PROG: NIGHT BY: GREG LIEF

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	1	0	2	BELL	LFO1	5	OFF	-
OSC 2	-1	0	1	OCT+5	OFF	-	OFF	-
OSC 3	-1	0	0	FORMT3	LFO1	5	OFF	-

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	48	ON	OFF	-	OFF	-
DCA 2	50	ON	OFF	-	OFF	-
DCA 3	56	ON	OFF	-	OFF	-

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	100	0	0	OFF	-	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	6	LFO3	39

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	16	ON	ON	TRI	5	0	21	LFO1
LFO 2	-	-	-	-	-	-	-	-
LFO 3	12	ON	ON	SQR	19	4	50	WHEEL

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	-	-	-	-	-	-	-	-	-	-
ENV 3	-	-	-	-	-	-	-	-	-	-
ENV 4	63	63	40	7	63	33	23	32	40	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	-	-

ESQ-1 PROG: Y-BASS BY: PAT FINNIGAN - THE BIG PICTURE COMPANY

	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH
OSC 1	-1	0	0	BASS	OFF	-	LFO1	10
OSC 2	-1	0	1	NOIS3	OFF	-	LFO1	10
OSC 3	-1	0	0	E PNO2	OFF	-	LFO1	10

	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH
DCA 1	53	ON	OFF	-	OFF	-
DCA 2	63	ON	OFF	-	OFF	-
DCA 3	63	ON	ENV2	63	ENV2	63

	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH
FILTER	30	0	4	ENV3	59	OFF	-

	FINAL VOL	PAN	PAN MOD	DEPTH
DCA 4	63	8	ENV2	63

	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD
LFO 1	24	OFF	OFF	TRI	0	0	20	WHEEL
LFO 2	-	-	-	-	-	-	-	-
LFO 3	-	-	-	-	-	-	-	-

	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK
ENV 1	-	-	-	-	-	-	-	-	-	-
ENV 2	63	0	0	57	0	0	7	0	20	9
ENV 3	63	18	0	63	0	0	28	26	22	0
ENV 4	63	59	55	10	0	0	20	63	0	0

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

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

Classifieds

USER GROUPS

Attempting to make contact with other users of Ensoniq and Atari gear. Lloyd S. Mandula, 950 Hillcrest, #108, Hollywood, FL 33021. 305-987-2437.

Home Recording Enthusiasts; the Home Recording CO-OP is looking for those musicians that are recording their own original music at home. Now you can get your music heard, NO contracts, NO pressures, everything is handled yourself. The Home Recording CO-OP lists your privately released tape and tells the buyer where they can get your tape. For information, send a self-addressed envelope to: HOME RECORDING CO-OP, P.O. Box 3516, Carbondale, IL 62901. If you're making music, let's hear it!

Hi, I'm Bob. I have a DSK-8 and a Mac Plus computer and I'm into noise/industrial music. I'm very interested in hearing from like individuals or groups or anyone who can send me free stuff, like software, etc., or who just want to compare notes or chat. Robert Barrett, 431 Hoyt St., Darien, CT 06820.

FREE MIRAGE DISK!!! Join M.U.G. 2 years of providing public domain samples to members. Receive monthly lists of quality user samples. Correspond with members. Special Discounts. M.U.G. Hotline (914) 963-1768. 1 year Membership: \$20 (1 free disk), Outside USA: \$30. Lifetime Membership: \$65 (2 free disks), Outside USA: \$75. Checks or MO payable: G-4 Productions, M.U.G., 622 Odell Ave., Yonkers, NY 10710.

SAMPLES

MIRAGE Sample Disk: #1: 100% analog wave (true additive synthesis), #2: Green Wedge, #3: Vibes. \$7.95 + \$2 p&h or \$2.95 + \$2 p&h if you send a disk. NOVOSONICS, Buzz Kimbal, RFD 1, Box 91, Contoocook, NH 03229.

FREE MIRAGE DISK!! Call M.U.G. Hotline for details. 914-963-1768. Or write G-4 Productions/M.U.G. 622 Odell Ave., Yonkers, NY 10710.

WANTED: Mirage samples of the Roland D-50 (orchestral, strings, brass, mysterious, winds, effects, etc.). As noise free as possible, looped or unlooped. Please contact: David Zwisohn, 905 Darlene Ave., Ocean, NJ 07712. 201-531-1840 or 212-984-3039.

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

I would like to trade my blank diskettes for your best Mirage samples. I need great strings, funk bass & rock guitar. My disks are of the highest quality. Mike Morgan, HCR 69, Box 253, Sanbounton, NH 03269, 603-286-4315.

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

MR WAVESAMPLE. DISKS: \$9.95 - DX7, Prophet, Emax, Oberheim, also Novelty, Special Effects, Animals, Hits, plus many more from one of the largest collections available. Acclaimed by many as fine quality samples. Compatible with all Ensoniq samplers. Send \$1.00 (applied to first purchase) for listings to: 162 Maple Place, Keyport, NJ 07735. (201) 264-3512 after 6 pm EST for details.

EQUIPMENT

ESQ-1, perfect, 8 months, with sequencer expander, 1 RAM and 2 ROM voice cartridges, \$850. Bill, 201-334-9412.

Roland JX8P \$550, Yamaha RX17 \$185, Korg EX8000 \$700, Yamaha CS60 \$500, Mirage + all disks, accessories \$1400. 914-963-1768.

3 IVM Mirage Memory Expanders. Brand new with warranty in box. \$275 each. Call 503-641-7941.

Looking to purchase used Mirage rackmount. Please call Donald at 718-672-5747 (Queens, NY).

Wanted: IVM Megabank expander, new or used. Will pay reasonable price plus shipping. Craig, 303-674-5933.

Passport Master Tracks Pro for the Commodore 128, and a Passport MIDI interface with tape synch. Excellent condition. \$250.00. 303-451-0731 after 7:30 pm MST.

AN IMPORTANT NOTICE FOR ALL ENSONIQ USERS: If you don't have a Yamaha FS-4 footswitch and our FSK adapter kit, you'll never know what you're missing - a sustain pedal that feels and works great! See the story in the Jan. '88 TH. Assembled and tested kits are only \$12.50 each (CA residents add 6.4% tax). Mescal Music, PO Box 5372, Hercules, CA 94547.

SOFTWARE

IBM public domain software for trade. Send your list to: M.U.G. G-4 Productions, 622 Odell Ave., Yonkers, NY 10710.

PATCHES

Anybody who is interested in trading sounds for the ESQ-1, please write. Data cassettes preferred, but sound sheets will do also. Philip Cook, Jr., 2805 Belcara Dr., Rustin, LA 71270.

For Sale: Q-SPECTRUM Volumes 1 and 2 160-voice ROM cartridge for ESQ-1. (Original Patch/Works ROM, not copy.) \$45. I'll pay First Class postage. Rich Trommer, 149 N. Gregory St., #9, Aurora, IL 60504. 312-851-6239.

ESQ-1 -- GREAT NEWS! Our SONGWRITER SERIES 2 is finally available. Yes! There's more great percussion including: GATED ACOUSTIC SNARE, a really "FAT" KICK, a RIDE CYMBAL that sizzles, big TIMPANI, and more TOMS. Series 2 picks up where Series 1 leaves off with more symphony sounds including: ORCHESTRAL HORNS, PIANO/STRINGS, HORN/STRING & VOICE/STRING layers. More acoustic simulations: great VIBES, FLUTE variations, and a rich, warm GRAND PIANO that you just gotta have! We've got an ELECTRIC GUITAR w/distortion that plays great power chords (5th + Octave) in the lower register and a hot BRASS variation, great ORGAN patches, and some sounds from Huey Lewis and Journey. The complete SONGWRITER SERIES 1 & 2 sound set is available on 80-voice RAM programmable CARTRIDGE for \$59.95. Series 1 (Cart B) or Series 2 (Cart A) are available on DATA CASSETTE for \$19.95 sold separately, or get both cassettes for just \$35.00. Please include \$2.00 shipping & handling with any order (Calif. residents add 6.5% sales tax). Send check to: The MusicBank, 18522 Mt. View Avenue, Los Gatos, CA 95030. Visa or M/C accepted by phone: 408-353-5040.

SOUNDSET 1 - 40 superb patches for the ESQ-1 or SQ-80. Accompanying 22-page booklet lists sound data and reveals programming techniques - by the Hacker's Sam Mims. \$17.95. Mirage disk or cassette. Syntax Productions, 11116 Aqua Vista #2, North Hollywood, CA 91602.

840 NEW ESQ-1/SQ-80 SUPER SOUNDS. Each patch programmed to the full capabilities of ESQ-1. Only \$19.95/280 patches or \$49.95/840 patches. Cassette or Mirage disk format. Putting it simply, we feel everyone should own our creative sounds. 5000 DX711 FD/DX7TX patches. EXCELLENT SOUNDS. NO DUPLICATES. \$39.95. 1028 NEW TX81Z/FB01/DX100212711S. Professional patches. High quality. No fillers. \$19.95/352 patches, or \$49.95/1028 patches. \$2.00 P/H. MUSIC WORLD, 617 Panorama Drive, Grand Junction, CO 81503.

PATCH UPGRADES

VOICE CRYSTAL UPGRADE #8-A3-3.1
MODEL: VC3

PATCH: OBXHRN
LOCATION: BANK A3
OSC 2: WAVE=REED
OSC 3: FINE=04
FILR: RES=03
DCA 4: MOD=ENV4 * 60

NOTE: Adds a bit of brightness to the horns as well as reducing the chorus effect. This patch was used as the basis for a voice created for Keith Emerson which will appear on Voice Crystal 4!

SEQUENCES

ROLAND MC500 sequences wanted. Your list gets you mine. 914-963-1768. G-4 Productions/M.U.G., 622 Odell Ave., Yonkers, NY 10710.

ESQ-1 Percussion Grooves! **FACT:** Rhythmic Interludes "Spice" up your Musical Act. **INTRODUCTORY OFFER:** Sounds + Sequences \$10. Try it... You'll like it! Specify format. The Sound Percussionist, PO Box 720635, Orlando, FL 32872. Refundable demo: \$4.

For the ESQ-1 with expanded memory: Classical music sequences from piano and organ scores. Patches to go with the sequences using SOS software and Commodore 64. Send for a free list. Four volumes now available at \$14.95 each. Also supplied on data cassette. Audio cassettes of the same material, \$6.00. Don Pribble, 6810 Highway 55, Minneapolis, MN 55427.

INSTRUCTION

MIRAGE VIDEO INSTRUCTIONAL TAPE. MIRAGE BASIC TECHNIQUES VOL. 1. Basic operational functions, parameter functions, basic sampling, multi-sampling, basic MASOS functions, moving wavesamples, making performance disks, tips and tricks... **BONUS!!!** Also hear demonstrations of M.U.G. sounds from the M.U.G. library. (Approx 70 min.) \$29.95 + \$3.00 shipping and handling. M.U.G. members: \$19.95. NY State residents add tax. Specify Beta or VHS. G-4 Productions, Dept. MV, 622 Odell Ave., Yonkers, NY 10710.

SERVICES

M.U.G. Hotline: 914-963-1768.

If you need many different sounds instantaneously, and can't afford \$269 to \$400 for a memory expander, and you don't have the time or patience for customizing your own disks, then give me a call and for as low as \$2 per wavesample I'll do the job! Need a sound? I'll sample it for you. I can also add loops to your samples. Call or write: Mr. Wavesample, 201-264-3512 after 6 pm Eastern time. 162 Maple Pl., Keyport, NJ 07735.

OUT-OF-PRINT BACK ISSUES

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

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

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

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

FREE CLASSIFIEDS!

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

The Interface

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

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

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

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

Dear Hackers,

I'd like to pass on some important info which I recently discovered (frankly, much to my chagrin) and want to relate to all you fellow ESQ-1 owners.

First off, perhaps I should preface by saying that I think one could say I know the ESQ-1 fairly well sonically (I am the programmer of the Q-Spectrum sounds), and was surprised to hear from various sources that the SQ-80, which while described by Ensoniq as being completely compatible with the ESQ-1, might in fact sound slightly different especially with certain sounds. Ensoniq has said that they changed certain circuitry in the SQ-80 to improve the D/A conversion and the filtering section. Seemed good to me, at least on paper.

But goaded by reports from different people as to differences sound-wise between the two units, I decided to check out exactly what the story was and so went and took two identical Q-Spectrum cartridges, put one into an ESQ-1 and the other into an SQ-80, and set about to methodically A/B each patch one-at-a-time on middle-C. Many of the patches sounded the way they were supposed to, but yet certain patches didn't sound quite right to my ears. Not "bad" mind you, simply different somehow. On some patches ("MYLAR" from Q-Spectrum Vol. 1 for example) a completely different balance of harmonics was present(!) altering a subtle timbre relationship I had programmed into a patch which did not sound bad, but was not the one I created or intended. Going on to the next patch, FMPIANO1, I noticed a similar occurrence -- in fact I kept coming across the same thing again and again as I tried certain patches. I checked to see if any parameters were changing "accidentally", but that was not the case. I was perplexed.

Second part of story: A few days later, I updated my ESQ-1's 3 operating system from version 2.3 to the most recent 3.4 software which incorporates many SQ-80 sequencer and other improvements such as being able to add or delete bars anywhere in the measure (nice, huh?), for the ESQ-1. Now here is where this really gets interesting (if that's the right word). I start playing the MYLAR patch and lo and behold -- it sounds just like it did on the SQ-80! I go through the other patches I wrote down as sounding different, and THEY sound like they did on the SQ-80! I also own an ESQ-M module, and so repeat the same A/B experiment with the two cartridges to double-check my ears. Result: the patches sound "right" on the

ESQ-M and "not quite right" on the ESQ-1. By now I'm feeling like a character in a Twilight Zone rerun.

I want to talk to someone at Ensoniq -- so I called John Greenland, an Ensoniq sound designer I met a few months back doing some research at the Ensoniq factory. I explain all the same details I've just related, and he says that it is possible some of the voice architecture was accidentally altered in updating the operating system, and that he will check it out with the engineers and get back to me. At this writing I haven't heard anything further from Ensoniq -- I don't know if they were aware of this problem before now, and as I wanted to get this letter in as soon as I could. I don't have any answers yet as to what the problem or the cure is (I will follow up with another letter here when I get the info).

Third part of story: What is bugging me about all this is why only SOME patches seem to manifest this difference. Trying to troubleshoot this as much as I can, I again go through all the patches, write down the ones that sound different from the way they were supposed to and a couple of hours later, finally hit upon a common denominator and thus solve (part of) the puzzle, jumping up out of my chair crying "Eureka". All of the "problem" patches I notice use the waveform E PNO2! I check my findings: I turn off all oscillators but OSC1, open the filter all the way on the ESQ-1, and set the same exactly on the ESQ-M --- listening to the two I find the harmonics ARE different. Somehow I think (don't ask me how, I'm just a lowly programmer with golden ears) the waveform E PNO2 got changed between the old OS and the new OS. The same is probably true in the SQ-80, thus (partly at least) accounting for the sonic discrepancies. This just happens to be one of my very favorite waveforms -- a subtle, altered Electric Piano waveform with just the first nine harmonics left in -- and I used it to good degree here and there in the Q-Spectrum sounds. Hey, maybe Ensoniq will confer on me the "Order Of The Q-Chip" for doing their homework and de-bugging a major bug! Maybe they'll send me an EPS for my birthday! Naaaaaaahhhhhh... It's all in a day's work for Patch/Works Man, sweetheart.

So for the time being, I think if you are considering the OS 3.4 update you might want to wait. As nice as the OS 3.4 improvements are, considering the fact it will alter the way your ESQ-1 SOUNDS -- even if it's only patches which use the E PNO2 waveform -- I would wait till OS 3.5, or whatever, that will correct it. (I hope).

Sincerely,
Jed Weaver
Patch/Works Music Software
NY, NY

[Ensoniq's response - As a result of your relentless investigating you found a bug. Your trained ear picked up something most users would not have heard. ESQ-1 version 3.5 and SQ-80 version 1.8 corrects the errant waveform you found. Since we never received any reports from other end users, it is apparent to us that no else noticed it or found it different enough to report. Regardless, it is for this type of situation that we maintain a policy of continually upgrading our products and making those upgrades available to end users. Our EPROM upgrade policy includes EPROM's at no charge - end users are only responsible for the installation fee.]

[TH - Thanks for finding this sort of thing and letting the rest of us (and Ensoniq!) know about it.]

Dear TH:

As an employee of an authorized Repair Station for Ensoniq Corp., I can't help but be disturbed by Jay Meyers' letter in Issue #33. First off, let me state that I agree very much with Mr. Meyers' desires for service manuals for Ensoniq products, and I think he raises some very valid points (I bet he didn't expect that). But I must take exception to the tone of the letter and what he apparently sees as a plot by a major corporation out to fleece the very same customers they're trying to keep.

First of all, at least here in West Virginia, we are not lining our pockets with profits from unfortunate Ensoniq owners. In the two years we've been an Authorized Repair Center, we see an average of two to three Ensoniq products a week, of which one or two really have problems related to hardware. In all that time, only one person was charged anything for a repair. It was an out of warranty Mirage that was physically abused (broken keys and main board), and then we only charged the customer our cost on the board.

We have never charged any Ensoniq customer for reinitializing an ESQ-1 or charged a customer for diagnosing a problem. Further, I can't remember when a customer had to do without an instrument for a gig, or leave it for more than 24 hours when he doesn't have to play. What I'm trying to say here is that although I agree with Mr. Meyers' desires for more information, his real problem

Music Software

IBM

Passport Designs

Score - Desktop Music Publishing System _____ \$635
MIDIsoft Studio _____ \$119
Master Tracks PC _____ \$310

Jim Miller

Personal Composer System/2 _____ \$385

IBM

IBM PC Music Feature Card _____ \$485
MIDI Interface and FM Synth - including software

Macintosh

Passport Designs

Master Tracks Pro _____ \$275
Master Tracks Jr. _____ \$119

Intelligent Music

M _____ \$159
Jam Factory _____ \$119
UpBeat _____ \$119
Demo disk (specify M&Jam Factory or UpBeat) \$10

SRB International

Dept. Q

4394 Donald Avenue
San Diego, CA 92117

Send Check or Money Order-Include \$5 shipping,\$3 each additional item.CA residents add 6.5% sales tax-all sales are final

Question: Do you really need a \$2000 digital wave synth?

Answer: No, not if you have the Synthbank Vol.1 from

CYBERSONIQ.*

Includes 48 waveforms for Mirage digital wave synthesis and presets like voices, horns, bells, flutes, organs and fat analog pads.

Comes with: 2 disks (whole/split), manual, 192 patch listing.

Compatible with all Mirages, using the O.S. you already know!

Send \$29.95 plus \$3 for s/h to:

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

NYS Residents add 8.25% tax.

*That's if you have a Mirage/EPS, both trademarks of Ensoniq Corp.

seems to be with the dealer, not Ensoniq Corporation. Maybe back here in the sticks things are different than in the big city of Chicago, but around here, customer service still means something.

You see, we are also an authorized service center for Korg, Yamaha and Peavey, and I have to give credit to Ensoniq. They have never balked at anything we needed to do to satisfy a customer, including recently replacing the power supply, main board and display board for a customer one week after his warranty was up -- and a display board for a customer one month out of warranty -- because the customer merely called to complain before the warranty had expired. Try that with Peavey!

I'm sorry to ramble on like this, and I don't agree with Ensoniq's policy on technical information, but it's obvious to me they didn't decide this with dollar signs in their eyes. With new products coming out now, they can't risk alienating a built-in market like that (even Mr. Meyers bought an ESQ-1 knowing what he knows). I think Ensoniq's reasons aren't very strong, but after buying 5 rack mount units and a Mirage with a keyboard, you certainly wouldn't have to rent a keyboard for your impending studio date if you'd bought your Ensoniqs from us. And I'm sure there has to be a better dealer near you someplace.

When you work in the service business like I do (17 years), you learn to appreciate a company that cares and will work with you. Ensoniq has proven themselves to be such a company. So my advice to anyone buying anything that their careers depend on, is to buy a product from a company that cares, and buy them from a dealer that cares. I work for such a dealer, and Ensoniq is such a company, so I know that they do exist.

Kim Monday, Technician
CompuServe, [71445,674]
O.B. Fawley Music Co.
Morgantown, WV

[TH - That's what we figured.]

[Ensoniq's comments - Thanks!]

Dear TH:

Are you tired of hearing praise yet? Hope not...I think the Transoniq Hacker is a great publication, one of the few I've seen that can be called genuinely useful.

I'm writing to mention something that may be of interest to other ESQ-1 owners: I recently mail-ordered a book sold by Valhala, one of your advertisers, called the "ESQ-1 Bible." It can be frustrating to buy products through the mail because you can't be certain of what you will get. This book is one of those disappointments. The edition I

received appeared to have been published before being edited or read by anyone; I found it unreadable due to the poor grammar, misspellings, and lack of clear structure or meaning. But, most disappointingly, it had no significance as a programmer's reference. I found nothing in it to even supplement the Ensoniq manual, and many pages were devoted to describing things such as the waveforms already depicted in the ESQ-1 manual. There are 40 patches on program sheets, and that's essentially what you get for your \$27.95 (\$24.95 + \$3.00 postage).

To Valhala's credit, when I returned the book they sent me a check for \$24.95 -- without comment -- so I am only out 5 bucks or so for postage.

I assume many other readers also purchase Mirage/ESQ products through the mail. I know your product reviewers simply cannot keep up with the huge number of items being sold, but we sure can. Since it can be extremely valuable to read firsthand reports, would it be possible to devote some space in the Hacker specifically for reader comments? I believe that if you just ask, many people will write about both bad and good experiences.

By the way, I read something in the January edition about the possibility of you "going slick." Put me down as against it, on purely utilitarian grounds: it's much easier to read the Hacker than any of the glossies -- honest!

Craig Haggart
Sunnyvale, CA

[TH - Thanks for the feedback. We'd rather not put aside a dedicated space for reader's comments on various products - they're always very welcome in The Interface. We hope the slick hasn't disappointed you too much. The photos should come out a lot better and the print should actually be a little darker than before. Probably shouldn't try to read it by the swimming pool though...]

Dear Sirs:

As a recent purchaser of an ESQ-M, I am a little concerned about its buggy response to generic system exclusive messages, such as from my Yamaha DX7II's disk drive, and from some computer librarian programs for the ESQ-1.

My questions are: 1) Is there a way to get the ESQ-M to send its patch banks over MIDI to external devices successfully, and, 2) if not, is Ensoniq planning to fix this as they did with the ESQ-1, via a ROM upgrade?

Thank you for your attention on this matter.

Yours truly,
David Anderman
Solana Beach, CA

[Ensoniq's response - There really isn't any such thing as "generic system-exclusive messages." There are however, "generic system-exclusive recorders" such as the DX-7II (not to mention the SQ-80 and the EPS).

These devices simply record whatever sys-ex message they receive and save them to disk. Later you can send the same message back to the device which originally sent it (or to some other compatible device). In this way you can store patches, sequencer memory drum patterns, etc.

The ESQ-M will send its internal programs out MIDI either one at a time or as an entire bank (see pp. 86-87 in the ESQ-M Musician's Manual for instructions.)

When you save data to a sys-ex recorder, imagine that you are sending the data from one ESQ to another. The sys-ex recorder simply "intercepts" and holds the data for a period of time before sending it along to the receiving unit (which is the same unit that sent the data to begin with.)

Dear Hackers:

I couldn't resist the temptation to respond to Clark's response to Pete Profilet about mix-mode and the WX-7 in the March letters column. Hopefully, both Pete and Clark will see Walter Daniel's fine review of the Upward Concepts SM-1 Super-MIDI Disk and find out how to really use the WX-7 and Mirage via the Super-MIDI disk's MIDI volume control. Of course the EPS will have volume control built in, but Mirage owners can add the capability for a very modest fee with this disk.

A major feature of the SM-1 OS is the ability to save volume control device numbers with sound samples. A separate controller can be specified for each of the four patches on an upper or lower sound sample. When you load your sax sample, the breath controller automatically loads in with it. Load in your B-3 sample and the foot pedal controller gets loaded.

To clarify Mr. Daniel's question about the SM-1's "Midi Controllers to Local" parameter, normally MIDI pitch-bend, mod-wheel, sustain, volume and sostenuto inputs only affect MIDI notes. Notes played on the local keyboard are not affected. Since the Mirage has no volume pedal input, this controller must come in via MIDI. When "controllers to local" is on, the MIDI controllers all act upon local keyboard notes as well as MIDI notes.

For those of you contemplating re-wiring your Mirages with a transpose pot as suggested by Charles Fischer's letter in the same issue, all UPWARD CONCEPTS operating systems allow you to easily transpose by semitones

without voiding your warranty or zapping your Mirage's guts.

Thanks for the chance to respond.
Dick Lord
Upward Concepts
Durham, NH

[TH - Thanks for the real scoop. We also have an article (in hand, and soon to be published) that further explores the WX-7-Mirage connection.]

Dear Hacker:

Concerning Charles Fischer's article "Build a Footswitch Adapter" in Issue #31: I have been using a Korg DS-1 pedal as a sustain pedal with my ESQ-1. I guess that not too many people are aware that Korg also uses "normally open" footswitches in their products, as well as Ensoniq.

Not meaning to disparage Mr. Fischer's article in any way, or to discourage anyone interested in doing an electronic modification of this kind, I just wanted to pass the information on to readers. The Korg pedal is not cheap (its list price is in the \$50-60 range), but it works just fine with the ESQ-1, and is very solid--in fact, a little bit larger and heavier than the sustain pedal that came with my DX7.

Congratulations on a great, friendly, helpful newsletter, and keep up the good work!

Sincerely,
Peter Supersano
Zephyr Cove, NV

Dear Hacker,

I am looking for a waveform-sample librarian program for the Mac and my Mirage. The librarian would hopefully have the ability to not only receive/dump the waveform data but also the parameter data, just as the Mirage drive uploads samples. If fellow hackers know a solution, please give me a call or write the Hacker for all to share.

Mark
915-591-9176

[TH - Both Blank Software's Sound Lab and Digidesign's Sound Designer provide screens of the parameter data which you could then dump to the printer. We've heard of some utilities out there to print parameter data, but offhand can't think of any for the Mac. Readers?]

Dear Hacker,

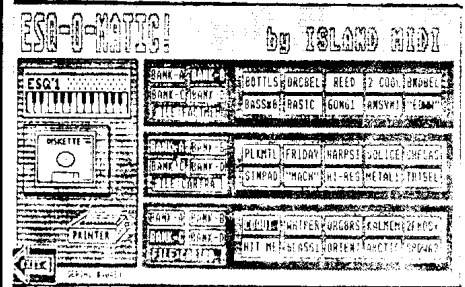
First, let me say that I am not a habitual letter-writer who sends all these questions to you just to see my name in print. I just think of things to ask as I continue to work with my Mirage.

ESQ-O-MATIC!

by ISLAND MIDI

ESQ1/M Patch/Sequence Librarian

for the Atari ST



- Fast ultra-friendly mouse system
- 3000+ patches on single-sided diskette
- 10 or 40 patches per file
- Prints patch sheets & directories
- Saves/loads full or single sequences
- Only \$39.95 (plus \$2.50 P&H)

Call or write for info...

ISLAND MIDI, P.O. Box 1102

Bayshore NY 11706

(516) 666-4167

EYE AND I PRESENTS —

Voice™ Crystal **ESQ1** **D-50** (NEW PRICE!)

NEW! **SQ180**

NOW AVAILABLE FOR THE

AVAILABLE AT YOUR DEALER

NEW! **SQ180** NEW!

Voice Crystal 1-SQ8 3½ Disc \$32.00
80 Voices plus Demo Sequences
(Not for use in ESQ-1 or ESQ-M)

SQ180 • ESQ-1 • ESQ-M
80 Voice Programmable Cartridges

Voice Crystal 1-ESQ \$62.95
Deep Blue E²PROM

Voice Crystal 2-ESQ \$62.95
Magnificent Red E²PROM

Voice Crystal 3-ESQ \$62.95
Mellow Yellow E²PROM

Voice Crystal X-ESQ \$49.95
Crystal Clear Blank RAM

(New Low Price!) **D50** (New Low Price!)

64 Voice RAM with Write Protect

Voice Crystal 1-D50 w/32 voices \$85.00
Voice Crystal 2-D50 w/32 voices \$85.00
Voice Crystal X-D50 64 voice blank \$85.00

EYE AND I PRODUCTIONS, Inc.
2151 Old Oakland Rd., #224 • San Jose, CA 95131
PHONE (408) 943-0139

Q - S P E C T R U M

Nothing else even comes close



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

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

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

Q-SPECTRUM™ -- For the ESQ-1/ M/SQ-80 -- Awesome, new sounds that will take you to new plateaus of performance. Each **80-voice Volume** is full of **all** types of instruments -- **acoustic and synthetic** -- with emphasis on keyboards. Great basses. Super strings. Real kick and snare. Fat analogs. Digital bells. And much, much more... Like having a \$100,000 recording studio in a cartridge!

- 80-voice ROM Cartridge -- Volume 1 or 2 -- \$44.95
- 80-voice RAM (E²) Cartridge -- Volume 1 or 2 (programmable) -- \$69.95
- 160-voice ROM Cartridge -- Contains **both** Volume 1 and 2 ! -- \$79.95
- 160-voice RAM (E²) Cartridge -- Volume 1 **and** 2 (programmable) -- \$129.95
- Data Cassette -or- Disk (ST/Dr. T) Volume 1 or 2 -- \$29.95 Demo tape - \$5
- NEW ! Blank 80-voice RAM (E²) - \$49.95 Blank 160-voice RAM (E²) - \$94.95

Coming ... the SQ-80, D-50, 81Z SPECTRUM series ! Write...

AVAILABLE AT YOUR ENSONIQ DEALER OR DIRECT FROM

To Order: send check or money order (faster). Call for COD. Specify product and volume. Please add \$2.50 shipping. (Demo



ppd.) Foreign (US\$ only) add \$4.50. NY State residents, add sales tax. Write for voice lists. ESQ™ Ensoniq. D50™ Roland 81Z™ Yamaha

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

Anyway....

Is there any sort of modification that can reduce the clock noise from the Mirage? It's really annoying when you record directly through a board. My unit is out of warranty, so is this something I could do? If so, how? If not, who and how much?

Thanks for your time,
C.W. Vrtacek
New Milford, CT

[Ensoniq's response - If your unit is below serial number 14732, you may want the noise/bandwidth enhancement. For more information, please contact ENSONIQ Customer Service at (215) 647-3930.]

Transoniq Hacker

I would like to see tips on sampling and the legality of using sampled sounds. For example, can you sample a sound from ROM and sell the sound? I really don't understand what is considered copyrightable and what isn't. I think this would make a very interesting article.

Sincerely,
Thomas M. Osborn
Cicero, IL

[Larry Church replies: Patch programmers are entitled to protection for their programs under copyright law, but the sounds these programs produce are not copyrightable. If the terms of a patch sale stipulate that these sounds not be used commercially, then the case changes. Such a stipulation seems unlikely as not many people will buy patches if they can't use them at the gig or on a recording project. The law doesn't seem to recognize a difference between these uses and the sampling and re-sale of a sound.]

At some point the law does allow for greater protection. The sampled material might exceed a certain complexity and represent perhaps a melody or otherwise protected method of organizing or presenting sounds. In a recent conversation with Portland entertainment law attorney Bart Day, I learned that there is a large gray area here. The law is not particularly precise about what is or isn't protected. In addition, it is likely that identical cases will be judged differently by different courts.

Common sense and good judgement should prevail. If you feel like you are ripping someone off, then don't make a business of it.]

Dear Hackers,

I am trying to develop a really GOOD harpsichord patch. Any suggestions?

Yours,
Walter Poat
North Chatham, NY

[TH - Issue #27 (September, '87) has some tips by Erick Hailstone (page 16) about diddling harpsichord patches. Hope that helps.]

Dear Hacker,

Thanks for your fine magazine (and for printing my letters).

I have a suggestion for the brains who work on ESQ-1 upgrades. How about allowing the sustain pedal to be assigned to particular voices as a controller? A practical application would be to build up a 4-6 note chord on one side of a split with the sustain pedal, then play a mono melody on the other side of the split, which would ignore the sustain pedal and allow the chord to continue. I realize this is possible with the ESQ plus a (synthesizer of your choice), but it would also be possible with just the ESQ.

I applaud Ensoniq on its seemingly continuous ESQ upgrades (even though it's released the SQ-80). Do Yamaha and Roland provide such extensive support? And look at the Ibanez MIDI guitar. The price fell 50%, then the instrument disappeared. Does anyone know of third party or other upgrades for this which I bought to use with the ESQ?

What's going on with Blank Software's Sound File for the C-64? Did they ever upgrade past V1.0 (which is full of problems)?

Keep up the good work.
Wayne Dooley
Winchester, VA

[Ensoniq's response - The sustain function is a global function on the ESQ-1. While it is possible to incorporate it into a patch as a patch parameter, we have no current plans for this modification.]

[TH - Unfortunately, our contact at Blank Software says that the C-64 Sound File software has been discontinued. So far at least, the PROM-based O.S. for the ESQ hasn't attracted the third party vendor-hackers. But maybe one of them will hear your plea.]

Dear Hackers,

Thanks for publishing a magazine that is most helpful to Ensoniq owners.

I would like to offer the a couple of suggestions:

1. Rather than offering software version update information in bits and pieces how about a short review of new operating systems as they are released. This would be most helpful in deciding when to update my ESQ-1.

2. Do you have any reviews of "Sound-process" planned?

3. I am still looking for a good "Pedal Steel" patch for the ESQ-1. Can anyone help?

Yours truly,
Darrell Fedak
Sask., Canada

[TH - This is probably old news by now, but TH Issue #33 (March, '88) reviewed Triton's Soundprocess and we ran Jack Ginnever's nifty Steel Guitar and Techniques article in Issue #34. The OS upgrades usually follow more of a "slow evolution/bug fix" type of path and it usually doesn't seem to make sense to devote a review to it. More dramatic changes (such as 3.4) get announced in Random Notes. If a review were to happen, it would probably be at least two months later before it would see print.]

Dear TH,

Regarding Robert Planner's letter in the March issue about some patches distorting around the lower end of the keyboard: Try lowering the input levels at the DCA pages. If amplitude settings of 63 or above are used with more than 1 DCO, distortion is likely. It seems that some waveforms distort more than others, and on some patches a little intentional distortion adds a little "spice" to the sound.

My advice to Robert or anyone wishing to clean up a few nasty patches is to call up all three DCA pages and verify that all 3 DCOs are on. Note the level settings of the initial LEVEL (soft button #1) and any modulators used. Add up the total on each page, and each one will probably be 63 or higher. To lower the distortion, make sure that the total sum is no higher than 56 or 57 (if only 2 DCOs are used), or 52 to 53 (if all 3 oscillators are on). It seems a lot of programmers suffer the malady of cranking the mix page up whether or not it actually helps the patch in question, and a little editing can clean up many otherwise usable sounds.

Best wishes,
Charles R Fischer
Mescal Music
Hercules, CA

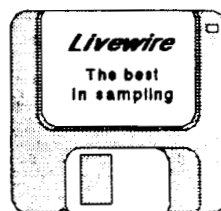
[TH - Thanks, Charles. (You sure there isn't a way to do this in hardware?...)]

Dear Hacker,

I need your help. I am an ESQ-1 owner dissatisfied with the ESQ-1 electric piano sounds heard so far. They have an organ quality I don't particularly care for and the DX-7 Rhodes patches you've published aren't quite what I am looking for either. I am interested in learning how to obtain on my ESQ a classic

Presenting...

Livewire Sample Library



Great samples for the Ensoniq EPS, Mirage, and Casio FZ-1. All of our sampling is studio-recorded with the best equipment for a clean, quiet sound. Our prices are VERY affordable, at \$8.95 & up for Mirage disks.

All our Mirage disks now come with Leaping Lizard's new operating system. Re-assign your MIDI send & receive channels, controller functions, transpose the keyboard, send "all notes off", and more! All of these extra's at NO EXTRA CHARGE!

Now: Pick YOUR OWN disk library. Don't get stuck with sounds you don't want! Order a Library index (\$2) for a complete listing, or order a demo tape (\$6). Please specify which sampler(s) you own.

Livewire Audio also has the synth sounds you want at affordable prices. Top-notch patches for ALL Yamaha, Korg, Roland, Casio, & Ensoniq synths from \$15.95 a set. Demo tapes are available for most synths for \$6. For full details, send a stamped self-addressed envelope - please specify your synth(s). Add \$2 for a DX, CZ, DW8000, Mirage, EPS, MT-32 or FZ-1 listing. We stock MIDI software, Leaping Lizards and TRITON utility disks for the Mirage too. TRY US!!

Livewire Audio

Dept. TH
PO Box 561
Oceanport, NJ 07757



Ensoniq Mirage Software

- Drum Sets #1** - includes 3 sets of Phil Collins drums \$6.95
Drum Sets #2 - includes Robert Palmer and Janet Jackson's sets along with rap's scratch drums \$6.95
Bass Collection #1 - includes several Midi and Digital Bases and other asst. samples \$16.95
Synth Collection #1 - includes Synth Brass, Strings and more \$6.95
Guitar Collection #1 - includes Bass Guitar, Mandolin, Jazz, Folk and Zeppelin Guitars \$6.95
Effects #1 - includes Cheers/Crowd, Motorcycle, Reverbed Vault Door, Telephone, Mr. Ed, The Twilight Zone and others. 2 disk set \$12.95
Sample Disk (asst. samples) \$4.00
Complete Set (8 disks) only \$46.95.

Add \$2 ship/hand.

GSR Software Co.

538 So. 2nd

Albion, NE 68620

Fender Rhodes sound and/or the famous DX-7 electric piano sound like that on Whitney Houston's single "Didn't We Almost Have It All." Any help you can provide would be most appreciated.

Sincerely,
Douglas C Medeiros
Somerset, MA

[TH - Patchers?]

Dear Hacker.

I enjoy your magazine very much and I have a question. I own an ESQ-1 (version 2.0) that I am preparing to interface with a Yamaha PF10. My question is will the ESQ read the sustain MIDI code? The kit sends info on controller #64. How can I get around this?

Thank you,
David B. McDonald
Concord, NC

[Ensoniq's response - The ESQ-1 certainly responds to sustain pedal (MIDI controller 64) information received from external devices. When you play the ESQ from a PF10, the ESQ should react to the PF10's sustain pedal just as you would expect it to.]

Dear Sirs:

In the January issue I inquired about the availability of scoring software to copy directly from the ESQ's sequencer. You suggested I contact Quiet Lion. I had just read their ad about Mu-Script. Now, I have that software and can tell you that it is super, and it is very easy to transfer sequences from the ESQ and then print scores and it only costs \$100.

Respectfully,
Keith Hammond, MD
Cape May, NJ

Dear TH,

I would like to support C. Alleyne's letter (March issue) regarding Valhala's Voice 320 cartridge. The quality of the sounds was very disappointing. I returned the cartridge for another thinking perhaps the cartridge was at fault - such was not the case. The person I spoke with at Valhala brushed off my complaint saying that they had had about five people that did not like the product. To me, even one is too many. He showed a lot of class as a business person by becoming annoyed, saying there was nothing he could do. Beware, fellow Hackers. Test drive a Valhala product first.

Joe Pace
Amherst, NY

Dear Transoniq Hacker,

A couple of questions if I may:

1. I've heard rumors of a stereo option, and, although Ensoniq hasn't authorized a product yet, they published a circuit

diagram in *Electronic Musician* magazine. I wonder why they can't supply an authorized hardware version for owners of older Mirages.

2. Does the authorized noise-for-bandwidth enhancement add much improvement and is it still available?

3. I've seen ads for products allowing you to change OS's in the Mirage. Is there any way to add the MIDI Sample Dump Standard to the sampler in order to access a wide variety of samples from other samplers directly? Has anyone attempted this?

4. I am looking for a sample of a waterglass being played by rubbing fingers around the rim, similar to Edison's glass harp - any suggestions? I really love that sound.

5. And last - I heard that Ensoniq is working on D-50 sounds for the Mirage. Is this true?

Stewart Cherman
Morton Grove, IL

[Ensoniq's response - 1. Because the modification requires cuts and jumpers to the mainboard and requires additional circuitry, we cannot offer it as an upgrade due to the complexity involved.

We have heard that the mod is being offered in kit form. The article by ENSONIQ was offered as a more reliable alternative to a previous article in EM.

2. See C.W. Vrtacek's letter in this issue.

3. We don't know of any. However, many of the visual editing systems for the MIRAGE (ALCHEMY, for example) can access samples from other systems and transfer them to the MIRAGE. You will still need to perform editing on the sounds because the analog/control sections (ENV, FILTERS, VCA, etc.) of most samplers are different and impart different qualities to a sound.

4. This sound is available on Sound Disk C-2.

5. At ENSONIQ, we try to create sounds which are original, though the source material may come from many sources. Sampling a synthesizer doesn't require as much effort as recreating an acoustic instrument and is therefore not a priority in our sound development activities.]

[TH - Regarding the stereo mod, you should contact Musitech at 615-894-9771.]

Dear Hacker:

I think you missed the point of Pete Profilet's letter in the March issue. Pete seems to be looking for MIDI volume control which is not supported by Ensoniq's OS 3.2. There are a couple of third party OS disks which DO support

ATTENTION !! SQ-80 OWNERS

1000 +
NEW VOICES
ON DISK

**SOUND
BANK™**
SQ-80 LIBRARY VER 1.1

\$39.95

PLUS \$2.00 UPS

FRED'S MUSIC SHOP

212 W. LANCASTER AVE.

SHILLINGTON, PA. 19607

1-215-777-FRED(3733)

MIDI volume (both send or receive) which most wind controller players will find useful.

Thanks,
Christian Super
Los Angeles, CA

[TH - Darn! If there's anything we hate doing, it's missing an opportunity to toot an advertiser's horn. Both Upward Concepts' and Leaping Lizards' products support MIDI volume control. (Upward - Send & Receive, Lizard - Send.)]

Dear Sir,

You really deserve all the compliments you receive for your efforts in producing such an informative monthly production. Please keep doing the articles on the ESQ-1 which detail procedures to follow to get the maximum mileage from its capabilities. It would be nice to see an article on in-depth sequencing with a detailed example to follow using layered sounds - again, with a view to maximizing the full capabilities. Also, anything on tying in the ESQ with other Ensoniq rack mount products using the ESQ as a master keyboard.

Yours sincerely,
David King
Surrey, England

[TH - Always open for submissions.]

Dear TH

I am looking for information on the nitty gritty details of the Mirage disk format. I am working on some direct synthesis software and would like to be able to read and write Mirage format disks directly. There must be some hacker out there that would be willing to share this information with me.

Thanks,
Tom Doyle
5222 Big Bow Road
Madison, WI 53711

[TH - Actually, just such an article is on the way.]

HELP Hacker or Ensoniq!

My name is Mr. Wavesample and, as a lot of people may know, I sell all kinds of keyboard samples. Now some of my customers are happy with the standard one upper and one lower sound bank (1, 2, 3) setup. Others need more sounds per bank (up to a possible seven) which cover the entire keyboard. I can make these seven sounds available via the eight upper and lower programs by hitting 0/PROG LOWER 1-3 to get the three lower sounds on 61 notes and

Hitting 0/PROG LOWER 4 to get to the upper 1-4 programs on 60 notes. They will be all full keyboard sounds.

My question concerns the above procedure and the EPS... How can you use the Mirage and DSK disks on the EPS to obtain the same configuration? What punches should I use, what parameter values need to be changed, etc.?

Mr. Wavesample
Keyport, NJ

[Ensoniq's response - The architecture of the EPS is quite different from the MIRAGE. Although any one of the four MIRAGE programs can be converted to play on the EPS, the remaining programs are ignored. Also, certain MIRAGE functions (filter resonance, for example) are not available on the EPS.

The EPS can have up to eight instruments available at once (memory permitting) and each instrument has four patches instantly available (using the PATCH SELECT buttons.)]

ESQLIB

IBM-PC Librarian for ESQ-1

- * Load/Save SONGs, SEQUENCEs, BANKs, & PROGRAMs
- * Construct new BANKs or rearrange old BANKs
- * Versatile performance-oriented SET loader
- * Menu-driven file management functions
- * Print or display ESQ-1 PROGRAM contents
- * May be run from hard-disk for virtually unlimited numbers of BANKs, SEQUENCEs, SONGs, and SETs !
- * Requires DOS 3.1, 512k, CGA/EGA/VGA, MPU-401

To order: Send \$69 check or money order to...

S.N.Musser Hardware & Software Systems
619 N.Park St. Allentown PA 18102
(215) 432-3292

ESQ-1 is a registered trademark of Ensoniq Corporation
IBM-PC is a registered trademark of International Business Machines



MONSTER DAN is still surviving sequencing madness, and now

OVER 150 Top 40

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

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

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

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

TRANSONIQ HACKER

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

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

SUBSCRIPTION MATERIAL

FORWARDING AND RETURN
POSTAGE GUARANTEED

DATED MATERIAL - TIME VALUE

Publisher: Eric Geislinger
Editor: Jane Talisman

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

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

Printed in the United States.

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

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

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

DE RIO PRODUCTIONS

ESQ-1/SQ-80 OWNERS

*There are patches,
There are programs,
Then There are SOUNDS*

If you are **TIRED** of cheap **FACTORY EDITS**, then load your instruments with unique and distinctive sound collections by: **DE RIO PRODUCTIONS**

ESQ-1 a) Songwriters Series 1 (on Data Cassette)
 b) E-Z Trax collection

SQ-80 a) Elite Sounds Collection (on Disk)
 b) Avante Garde Sounds Collection

ESQ-1 DEMO TAPE \$5.00

SQ-80 DEMO DISK \$7.00

Each Volume contains 160 studio quality sounds for \$24.95
Please specify Volume requested on your cheque or moneyorder

Send cheque or moneyorder to : *De Rio Productions*
26 Bradfield Ave.
Toronto, Ontario
M8Z- 2A3 Canada

Orders outside U.S. & Canada Add \$2.00
For Shipping and Handling