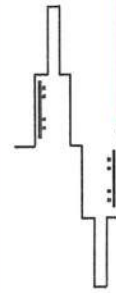


Transoniq

Hacker

The Independent News
Magazine for Ensoniq Users



TS-12 — The Rush is Back

Jeff Rhoads



In the early '70s the Mini Moog was the piece to have. This odd little thing with its pop-up control panel and mono keyboard drew gasps of

amazement from players and on-lookers alike. I remember how lucky I felt to be able to own one. But, I'll never forget the feeling I got when I powered up my first Prophet 5. Here, beneath this long wedge, was the ability to do the impossible; actually store your own settings as "presets" for instant recall. Wow! And 5 voices of polyphony! Toggling thru the presets(!), I found myself in awe of what I heard. The sounds! I was totally entranced. Hours disappeared in endless possibilities. What a sensation... what a rush!

I've had the chance to play a lot of synths since then ('cause I'm old, see?). While some of the 'boards I've sampled(?) have been very impressive, even groundbreaking, they've never quite stirred my soul the way that Prophet did...until now. The rush has returned again. Ensoniq's TS-12 has given me that same sense of discovery.

Why, after all this time, the TS-12? At first glance it's essentially a TS-10 with a weighted piano keyboard. It also, more or less, gives introduction to version 2.0 O.S. This chip-upgrade offers some new additions that make the TS-10/12 platform easier to fathom. Version 2.0 (2.02 as of this writing) also delivers sounds and

programs that have been carefully re-voiced. But, the TS-12 seems to be more than just a TS-10 with a new keyboard. It sounds and feels like something independent and complete on its own. What's more, it may help to light that elusive creative spark. Keep reading.

The Keyboard

At the front of the TS-12 is a 76-note, weighted piano keyboard. The actual physical keyboard comes courtesy of Fatar Corp., well known as the manufacturer of soundless controllers. In fact, it's the keyboard that's made their controllers desirable and popular with those who need control over one or more synth modules.

I wanted to see what the keyboard felt like with no sound. So I switched off the TS-12's power, thus, isolating its keyboard. The action is firmer than that of my acoustic piano. The keys have no noticeable side to side movement and their return feels natural, with a hint of back-touch. And this keyboard is very, very quiet. And it weighs 55 pounds.

Now, switch the TS-12 on again. The true sensitivity of the keyboard lies somewhat deeper.

Press System to see the first sub-page. TOUCH=SYN-VEL 3 appears on the lower right corner of the display. There are 14 velocity curves at your fingertips (ahem!); 6 piano, 6 synth and 2 fixed. In future articles, we'll look at these more closely. For now, it's important to know

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that Ensoniq developed this system software with the help of different players, each with different playing styles. This, along with the piano programs, gives the keyboard a more human feel. Play one of the TS-12's onboard pianos (try "Stereo Piano" in ROM BankSet R2.) Close your eyes as you play. Now, imagine playing a 9-foot Grand.

I've played different sorts of piano music using different "pianos" and velocity curves on the TS-12. Bruce Hornsby's "Harbor Lights," Herbie Hancock's "Dolphin Dance" and Scott Joplin's "The Strenuous Life" all require separate "feels." Different velocity curves can be chosen for each piece. Remember, though, that TOUCH is a global parameter so you may not want to change it once you've found a setting you like. You can fine tune the upper end of a curve using the VEL- MAX parameter located to the right of TOUCH. Take your time with the velocity curves. After some experimentation using this music, I've settled on a TOUCH value that suits my playing. The whole process has been entirely satisfying.

Synth and instruments played from the TS-12's keyboard sound as if they possess life. Complex pad sounds translate very well since each layer can have its own velocity attack, release and level settings. Bass-synth sounds pound at your chest with each keystroke. You can feel your fingers hitting the strings. Leads sizzle as you dig into the keys. Trumpets seem richer, soprano saxes are more haunting when you play them from the TS-12's keyboard. Guitar, ensemble sounds, drums...any sound becomes a psycho-acoustic playground. It suddenly seems to be bigger, more than just itself. Your hands were designed for this. It's got real guts to it. You're playing on something subtle yet full of power. Regular plastic weight synth 'boards now seem implausible. And the rush continues.

Operating System 2.0

As I stated earlier, with the TS-12 comes the new version 2.0 Operating System. It's available for a small bench fee to TS-10 owners. You guys and girls who don't have it yet, I'd recommend upgrading...like, yesterday. This O.S. does way more than rub out bugs. It delivers annoyance-bashing tools like Tempo Track, Auto Locate and SCSI support. Round out the software with Soundfinder, include revoiced programs (on the TSD200 disk), and you've got something worth lusting for.

Tempo Track works in conjunction with Song Mode. You can record continuous (real time) tempo changes to any Song. All the ACTUAL (recorded) sequence tempos are re-computed by the Song TEMPO value using a percentage of increase or decrease. As an example, say the Song TEMPO value = 00 and the ACTUAL (recorded) value of its sequences is 025. Set to a value of 00 the TEMPO has no effect on all the ACTUAL (recorded) sequence values that make up the Song. All ACTUAL sequences remain as they were originally recorded in the Song. But, a Song TEMPO value of 25 changes or biases the sequences ACTUAL (recorded) value to 111. Negative TEMPO values bring the ACTUAL value down. Confused? Okay, in *TEMPO-TRK* pushing the data slider up makes the song go faster. Pushing it down makes the song go slower. You're probably

going to use the Tempo Track the most during mixdown. Tempo Track is a real-time adjustment so you can also use it to sync up to live instruments. Song Track 12 gets to be the Tempo Track by default. Unlike normal tracks, the Tempo Track only contains tempo information. It cannot record sound.

If you thought you could survive without the new Auto-Load feature, rethink it. Auto-Load, in effect, takes a snapshot of your TS-12 system before power down. It then remembers system Sampled Sounds and settings the next time you turn the TS-12 on. For example, using the Auto-Load feature, Sample Sounds or Sample Edits you loaded into the TS-12 (and then turned the power off) are remembered by name, disk, file path and (Sampled Sound) bank for each of the Sampled Sounds. (Sample edits must be saved as a Sample edit file.) The Auto-Load prompts you to AUTO-LOAD ALL SAMPLED SOUNDS---- (*YES* or *NO*) when you turn the TS-12 on. Select *YES* if you'll be using Sampled Sounds. The Auto-Load prompt will also pop up if you've loaded a 60-SEQ/SONG file that uses (and was saved with) Sample Banks! Auto-Load also works with various SCSI devices. It will ask for and load Sampled Sound files from floppies, CD ROM, removable cartridges etc. And version 2.0 offers SCSI support.

A read-only SCSI option is available for the TS-10/12 platform. An optional SP-4 interface must be installed. (Contact your dealer for details). (After the SP-4 is installed, new field and status pages will be displayed allowing you to select the applicable storage option (choose SCSI) and SCSI I.D. number. Each SCSI device within a network communicates using an I.D. number. You may use numbers 0 thru 2 and 4 thru 7. I.D. Number 3 is permanently assigned to the TS-12 and can't be used for other SCSI devices.) With the Read-only SCSI option, the TS-10/12 can load Sampled Sounds from the ASR-10, EPS-16 PLUS and EPS.

The TS-10/12 has 300 programs and 300 presets in residence so it's possible to get a little lost if you're searching for a particular sound. With that in mind, O.S. 2.0 offers Soundfinder, an ingenious feature to make your search easier. Soundfinder's a breeze to use and it works in Sounds, Presets, and Sequence Modes. Each mode requires some simple though specific steps so we'll look at Soundfinder in more depth in later articles. ■

Current Ensoniq O.S. (Disk/EPROM)

EPS	2.49/2.40	SQ-R	1.02
EPS-M	2.49/2.41	SQ-R 32	2.03
EPS-16 PLUS	1.3/1.00F	SQ-R PLUS	1.15
MASOS	2.0	SQ-2	1.2
MIRAGE	3.2	SQ-2 32	2.03
ESQ	3.5	SD-1	4.10/4.10
ESQ-M	1.2	SD-1 32	4.10/4.10
SQ-80	1.8	DP/4	1.14
VFX	2.30	KS-32	3.01
VFX-SD	2.1/2.00	ASR-10	2.0/1.5
SQ-1	1.11	KMX-8	2.00
SQ-1 32	2.03	KMX-16	1.50
SQ-1 PLUS	1.1	TS-10/12	2.5

Front Panel

RND (🎵🎵)

Third-Party News

MIDI Mark Productions is now having a sale on 3.5" sample disks for the EPS/ASR/TS. You can get any 9 disks for \$49 plus \$3 s/h. They have over 200 disks to choose from and specialize in sounds for dance music. For a free catalog, contact: MIDI Mark Productions, P.O. Box 217,, Whittier, CA 90608. Phone: (310) 699-0095. Fax: (310) 699-0864.

HYPERSOVIQ NEW PRODUCTS

WAVEBOY Industries announces their fourth effects disk: *The Voder* — a keyboard-controlled vocoder and morphing filter bank for the EPS-16 PLUS and the ASR-10. Teach your sampler to talk; synthesize and sequence a vocal chorus singing the words to your song! Get those classic vocoder sounds — talking wind, talking bass, talking anything; sequence elaborate EQ changes that happen in sync to the music. *The Voder* effect is a bank of programmable filters that loads into the effects processor of an EPS-16 PLUS or an ASR-10. The filters are multi-band parametric equalizers (EQs) that can be modulated in interesting ways — most notably, they can make a sound talk or sing words. *The Voder* imposes the moving resonance of speech onto any input sound. But while the conventional vocoder uses a live vocal input to derive the control information, the *Voder* uses the keyboard or MIDI. *The Voder* contains a set of up to 64 different EQ settings which are programmed to imitate the formant structure of different phonemes. Each EQ setting is assigned to a different key on the keyboard. The active EQ frame is selected by the keyboard, or by any of a list of modulation sources including LFO and Random-Sample-and-Hold. The glide time between EQ frames is variable and can also be modulated. All EQ frames are programmable and not restricted to speech or phonemes. The *Voder* can "morph" between EQ frames, like the Emu Morpheus. Unlike the Morpheus, the *Voder's* EQ frames are user programmable. Chorus effect: a delay/chorus algorithm is available simultaneously with the EQ, on BUS1 or BUS2. Any instrument can be sent through the *Voder*, creating talking drums, talking strings, etc. *The Voder* comes with demo sounds for solo and chorus singing. The WAVEBOY *Voder Disk* is available directly from WAVEBOY Industries for \$49.95 including shipping. For further information, contact: WAVEBOY Industries, P.O. Box 233, Paoli, PA 19301 USA. Phone: 215-251-9562.

The Rhythm Factory announces the release of *The Elite Set* — 10 disks of all new samples for all EPS's, ASR's, and TS's. Disks are \$8 each or \$60 for the entire set. To hear what you're getting before spending your hard earned cash, a demo cassette of all Rhythm Factory products is available for just \$3 — refundable with your first purchase. For further information, contact: Bryce Inman, The Rhythm Factory, 303 Saddle Bridge Lane, Franklin, TN 37064. Phone: (615) 591-9875.

SoundDemo, running under Windows 3.1, is an audio conversion utility brought to you by Timothy Dorcas. *SoundDemo* will allow you to convert Wave & SampleVision files into Giebler's format

(EFE or EFA), let you edit Sample & Loop points, and set the loop type. *SoundDemo* is freeware but is restricted to files that are less than 15 kilobytes. If you use it, you should register it. Samples are included. *SoundVert 1.0* is a full-featured version of *SoundDemo* allowing you to process files of any length and adds the ability to convert Waves into SampleVision. Anyone may obtain a copy of *SoundDemo* via modem on Compuserve (in the MIDI section); on Sound Management's BBS (708) 949-6434, or CompUSA (401) 823-9256; or send \$5 to Timothy Dorcas, 12 Kipling St., Providence, RI 02907. *SoundVert 1.0* is currently \$15 (+\$1.50 for S/H).

TRANSONIQ-NET HELP WITH QUESTIONS

All of the individuals listed below are *volunteers!* Please take that into consideration when calling. If you get a recording and leave a message, let 'em know if it's okay to call back collect (this will greatly increase your chances of getting a return call).

All Ensoniq Gear — Ensoniq Customer Service. 9:30 am to noon, 1:15 pm to 6:30 pm EST Monday to Friday. 215-647-3930.

All Ensoniq Gear — Electric Factory (Ensoniq's Australia distributor). Business hours — Victoria. (03) 480-5988.

Sampling — The International Samplers Cooperative, 310-455-2653 or via MusoBBS, 818-884-6799.

SD-1 Questions — Philip Magnotta, 401-467-4357, 4 pm — 12:30 EST.

VFX Sound Programming Questions — Dara Jones, Compuserve: 71055, 1113 or Midi-net & Fido-net. Local BBS: Nightfly, Dallas: 214-342-2286.

SD-1, DP/4, ASR-10 Questions — John Cox, 609-888-5519, (NJ) 5pm — 8 pm EST weekdays. Any time weekends.

SQ-80 Questions — Robert Romano, 607-533-7878. Any ol' time.

Hard Drives & Drive Systems, Studios, & Computers — Rob Feiner, Cinetunes. 914-963-5818. 11am–3pm EST. Compuserve: 71024,1255.

EPS, EPS-16 PLUS, & ASR-10 Questions — Garth Hjelte. Rubber Chicken Software. Call anytime. If message, 24-hour callback. (305) 792-9231. Compuserve: 72203,2303.

ESQ-1 AND SQ-80 Questions — Tom McCaffrey. ESQUPA. 215-830-0241, before 11 pm Eastern Time.

BACK ISSUES

Back issues are \$2.00 each. (Overseas: \$3 each.) Issues 1–40, 61, 67–74, and 82–85 are no longer available. Subscriptions will be extended an equal number of issues for any issues paid for that are not available at the time we receive your order. ESQ-1 coverage started with Issue #13. SQ-80 coverage started with #29, (although most ESQ-1 coverage also applies to the SQ-80). EPS coverage got going with #35 (and also applies to the ASR-10). VFX coverage (which also applies to the SDs) got started in #48. The SQs got going in #63. (SQ articles also apply to the KS-32.) DP/4 coverage started in #88 (much of which also applies to the ASR-10). TS-10 owners should check out sample reviews (EPS/ASR) and SD & VFX programming tips. Permission has been given to photocopy issues that we no longer have available — check the classifieds for people offering them. A free back issue index is available which contains the tables of content for all issues since Number 43.

EPS/MIRAGE/ESQ/SQ-80 M.U.G. 24-Hour Hotline – 212-465-3430. Leave name, number, address. 24-hr Callback.

Sampling & Moving Samples – Jack Loesch, (908) 264-3512. Eastern Time (N.J.). Call after 6:00 pm.

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.

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

SQ-1, KS-32, & SD-1 Questions – Pat Finnigan, 317-462-8446. 8:00 am to 10:00 pm EST.

ESQ-1, MIDI & Computers – Joe Slater, (404) 925-7929. EST.

HACKER BASEMENT TAPES

Daniel Mandel

The Good, The Bad and the Wilde

Tape: *Neo-Classical & Electronic Composition.*

Artist: Steve Wilde.

Contact: 1820 N. Washington Ave., Clearwater, Florida 34615.

Equipment: Oberheim DMX and Yamaha drum machines, ESQ-1 and EPS, Onkyo mixdown deck, (using Dolby C).

As the functional title implies, this is Neo-Classical & Electronic Composition. Side one is Neo-classical, and side two is Electronic Composition. The neo-classical (15 pieces) are traditional harmony, counterpoint and chord progressions using obvious synthy sounds for the strings (even though they were obviously synthesized, the strings still sound exceptionally beautiful), keyboards, horns and reeds.

Side two, electronic composition, has twenty-two pieces with names like *To The Beginning or The End?*, *Space Opera and Spock's Ears*, *Before and After Before*, *Drums*, *No More Marios*, *Klangfarbenmelodie*, *And 12 Tone Variations: Quartet For Strings, Flute, And Piano*. The electronic composition struck me as very free, very streamy of consciousness. Steve uses a lot of analog, wet, moog synth patches. He uses theme and variation in sound and tonality as much as in the musical statements themselves. The downside is that there is not much continuity. Much of this style of music seems inherently anti-commercial. There are not a lot of hooks here.

On the Neo-Classical side all sequences were well executed. Introductions and endings were planned and natural sounding. On the Electronic Composition side any sequences were transparent to the slow nature, or the abstractness of many of the pieces. Introductions were more interesting in general, but endings were harder to come by. It seemed as though Steve were looking for a way out of the piece. I often felt as if the piece was being abandoned rather than finished.

Definitely the Neo-Classical side appealed to me more than the Electronic Composition. I didn't feel drawn into the structure of the Electronic Composition pieces, as I did with the Neo-Classical.

Tape: *Songs from the Wilde Side/Guitaristics.*

Artist: Steve Wilde.

Equipment: Gibson 20th Anniversary Les Paul Custom, Oberheim DMX and Yamaha drum machines, ESQ-1 and EPS, Onkyo mixdown deck, (using Dolby C).

This tape, as well, is divided into two definite sections. On *Songs from the Wilde Side* Steve graces us with his voice, which is deep and scratchy and goes well with this rock/jazz music. The recording quality of the individual parts could have been clearer. I would have been hard pressed to recognize any of the lyrics, except for the song titles printed on the J-card.

This is the second of three tapes submitted by Steve Wilde. Listening to any one of these tapes, you might get the impression that Steve is a talented musician and songwriter. However, listening to all three of these tapes you very well might decide that Steve is an enormously capable musical visionary who would be equally as comfortable scoring a sound track for a movie as recording a rock ballad or sitting in as a studio musician utilizing his variety of styles and talents! I realize that's a mouthful, but this is quite an amazing body of music, and definitely worth a listen!

Guitaristics features Steve as the guitarist (Gee Thanks, Dan!) in very small snippets of tunes ranging from two to three minutes. Steve says that his musical influences are Allan Holdsworth, Steve Morse and John Scofield.

Here the screaming guitar work is so fascinating, that you might not notice the supporting work underneath. If you do take a second listen, there are a lot of repetitive sequences, no doubt from our friendly drum machines. Fortunately, the main instruments are worth it. Still, a few more variations and clever fills would have made a profound difference. Steve's jazzier/fusion pieces have more well-planned percussion.

The recording itself is clear. The mix is acceptable. Here again, the mix sounds better on the jazzier pieces. This may be because all the separate parts can be heard more clearly. On some of the rock pieces the effects tend to muddy up the mix considerably.

This one is the most fun of the three tapes that Steve submitted.

Tape: *Jungle Jazz for the One-Man-Band/Neo-Classical Hardball.*
Artist: Steve Wilde.
Equipment: Oberheim DMX and Yamaha drum machines, ESQ-1 and EPS, Onkyo mixdown deck, (using Dolby C).

This is the third of three tapes that Steve submitted, and like the others it features two distinct different sides. Side one features *Jungle Jazz for the One-Man-Band*, while side two features *Neo-Classical Hardball*.

Jungle Jazz for the One-Man-Band continues in the Wilde tradition of really good composition in the rock/jazz/fusion category. This time Steve shows off his keyboard prowess. Most of these songs are three to four minutes long. This side opens with a strong mover, *E.Z. Does It*, which quickly develops a funky groove that sounds downright fun to jam to.

Milli Godzilla is a fast, frolicking piece.

Of all the different slices of music, the pieces on this side are the easiest to listen to. Maybe even the most commercial, although I'm not sure I'd go that far. Steve seems to be aware of the non-commercial aspect of his songs. He comments that "a record company has to sell 200,00 units. If they don't think you'll sell that many, you won't get signed."

Ultimately, if you were going to contact Steve and request one of his tapes you would have a hard time deciding which one, unless you choose squarely within the genre of your choice, and then you would no doubt be pleased. I suspect that these are a small sampling of what Steve has to offer.



That is, if he hasn't been signed or recorded since he last submitted. ■

If you want your tape run through the ringer, err, Hacker, just mail it off to: Basement Tapes, *Transoniq Hacker*, 1402 SW Upland Dr., Portland OR 97221.

Bio: Daniel Mandel is a songwriter, sound designer, and has sold pro audio and keyboard equipment and produced demo tapes for local bands.

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Sampling Synthesizers

Part 3 — Parting Suggestions

Tom Shear

If all has gone well since the last time, you probably have a couple of disks stuffed to the brim with some great synth samples. You've gotten them looped successfully, but now what? This time around I'll offer some suggestions about how you can polish them to a more finished sound.

If you haven't done it already, go through every wavesample and GAIN NORMALIZE them. If the sound in question is a non-sustaining sound, such as a drum or marimba, you should use the FADE OUT command, also on the AMP page, with a START value of about 90 and an END value of 99. Use the defaults for any other parameters. This will give the non-sustained sound a smooth fadeout instead of the tell-tale clicks these sounds sometimes contain at their tails.

The next part will depend largely on the sound you are using, so I can't be too specific. Basically, you will want to reintroduce any LFO, pitch effects, digital effects, etc that you programmed out of the source synth for smooth sampling. This would be a good time to tweak the envelopes and filters too, if necessary. If possible, listen to the original sound on the synth side-by-side with your sample until you are satisfied that your sample does the original sound justice.

Next, those of you with an EPS-16+ or higher should decide which of the on-board effects to use. If the sound you sampled had effects on it, try to reproduce this as closely as possible. Otherwise, you have a little more freedom to use what you want. Here are some general tips I've found to work well (these only cover the original 16+ algorithms):

- For drums, percussion, and percussive instruments, I like to use the HALL REVERB tweaked with a DECAY TIME of 0.
- For most synths in general, the CHOR+REV+DDL works great. The chorusing isn't as extreme as the CHORUS+ REVERB, so it is much more subtle and works on a wider variety of sounds.
- If for some reason your samples are very noisy, try assigning them to the PHASER+REVERB with the DEEP PHASE variation. This works very well to hide the noise and gives an exaggerated phasing effect that adds a very spacy sound to your sample. The phaser works well on just about any kind of pad as well. Use this one sparingly.

When you find the effect you want and have adjusted its parameters to your liking, use the COPY CURRENT EFFECT command on the COMMAND EFFECTS page to copy the effect to your instrument.

Finally, it's time to put together the patch selects. This is a great feature and virtually no one uses it. WHY!?! Through creative

use, this option allows you to quadruple the number of sounds you have. To start off, use the COPY LAYER command to copy your current layer (PARAMS ONLY, or you'll drive those block numbers through the roof!). If your sample is resynthesized or uses multiple layers, copy them as well. Now is when you can have some fun.

Press the EDIT INSTRUMENT buttons and you should see something that looks like this: 00 PATCH 123-----. This is where we put together our patch selects. What you see now is what layers will be playing when no patch select buttons are pressed. Make sure to adjust this so that only the layers you want playing are listed. In the case of a one-layer sound, this should read 00 PATCH 1------. The following example assumes you'll be using a one-layered sound, but doing this with a two or three layered sound is very similar.

To do our first patch select, press the left hand patch select button and the display should change to read *0 PATCH SELECT -2------. Change it so it reads *0 PATCH SELECT 12------. Press EDIT again so that you see the "Name of Instrument" LYR= X WS=ALL. Tweak the LYR number to read LYR=2, our recently copied layer. Press pitch now and find the ROOT KEY, FINE page. By changing the FINE value, we can make our sample have natural chorusing that makes a great patch select. Any value of +/- 5 and above will give you pretty noticeable results. Obviously, you can only go so high/low until this starts to sound awful, so experiment until you find the "safe range." You may even decide at this point that you like this version of your sound so much that it should be the default sound! Repeat the process above with other layers and patch selects until you have all three patch select slots programmed. Here are some examples of useful patch selects you might want to try:

- Adjust the SAMPLE START parameter (EDIT WAVE page) past the attack portion of the sound, change the ENV3 to SLOW STRING, copy this layer and tweak the FINE PITCH value mentioned above for a warm pad variation.
- On the EDIT WAVE page, change the MODE to BACKWARDS-NO LOOP.
- Tweak the ROOT KEY of your copied layer to give a higher, lower, or octaved version of your sound. Try tuning it to perfect fifths as well.
- Apply wild pitch envelopes for unusual sound effects.
- If you took your samples an oscillator at a time and resynthesized them, let individual layers play by themselves. In other words, if your final sound is comprised of a layer of strings and a layer of bells, program the patch selects so that just the strings, and then just the bells can be selected.

• Think of the sample as just an on-board waveform and really dig into those synthesis functions. You can get just about any kind of basic sound from a melodic sample if you work hard enough. Who says a string section makes a lousy bell? Who says a flute can't be a human voice? Work until you've mutated the sound beyond recognition. It ain't easy, but it's worth it!

So there you go. Make sure you save your work and enjoy your hard-earned new creation. As a final word of advice, use the COMMAND WAVE page option CONVERT SAMPLE RATE to push the sample rate down a little bit. Only a few sounds such as cymbals and bells truly need the full 44.1 sampling rate. Most others should sound more or less exactly the same at rate

as low as 28 or so. This will save you a lot of time and wasted disk space. I hope this series has been helpful to those of you who have been wanting to sample synths, but found the task too daunting. Yes, it is a lot of work, but it sure beats lugging your megaton Prophet 10 to your next gig! ■



Bio: Tom Shear would not mind it at all if Ensoniq decided to send him a free ASR-10.

D.I.Y. Project: The EPS 9-dB Boost Mod

John Loffink

Recently, while mixing a piece that uses my venerable EPS Classic, I came up against the problem of the low output signals of the earlier models. In order to get the EPS samples to a suitable level at my mixer, I had to set the EPS faders to maximum and all other instruments to mid-level — I have a rather modest mixer with no trim controls. This is not a good situation for getting the optimum signal-to-noise ratio from a mixer. It also reduces the range of levels for the other instruments to half of the mixer fader's travel. *[TH — To ye who venture onward: you're on your own!]*

Since I can't resist tinkering inside my instruments, I decided a good D.I.Y. project was in store for me. With ohmmeter in one hand, screw driver in the other, and my EPS warranty long since expired, I cracked open the shell of my EPS and began examining its contents.

The EPS outputs are driven by a quad op amp (U61) located in the top right corner of the machine. The final stage is configured as a follower driven by a filter network. Since there is no feedback resistor for this stage, there's no way to add gain without doing some cutting on the IC or printed circuit (PC) board. So I went back one stage and found an inverting amplifier and a single pole low pass filter. This is where I decided to add the gain.

Looking back at *Keyboard Magazine's* sampler shootout (March, 1989), I noted that the EPS output was 6 to 12 dB lower than most of the samplers. The review in *Keyboard* February 1991 shows that the EPS 16-Plus output is a full 10 dB greater than that of the EPS Classic. Since I wanted the EPS Classic output to roughly match that of the 16-Plus, I decided to shoot for a 9-dB boost in the output level.

This mod only applies to EPS's with serial numbers below 16582. Later models have a 6-dB boost in the output circuit.

Unless you're going to do the work yourself, or have a friend who will do it au gratis, then you should take your EPS to your nearest Ensoniq Authorized Service Facility, because Ensoniq will provide a 6-dB upgrade kit free of charge, though you'll still have to pay the labor charge set by the service facility. Ensoniq will not provide this kit directly to their customers. I don't know if the Ensoniq mod is similar to my own.

This modification will not improve the signal-to-noise ratio of the EPS. Since all we're doing is boosting the gain on an amplifier in the output stage, noise is boosted just as much as the signal. The EPS output is not nearly as quiet as the '16 Plus or later Ensoniq instruments, but is comparable to 12-bit equipment of that era.

If any of the terminology in this article is confusing to you, then you're probably not qualified to do the mod. The following tools (and experience using them) are needed:

#2 hex allen wrench
Phillips head screw driver
Adjustable wrench
soldering station
vacuum type desoldering station

I do not recommend using desoldering braids, pumps or bulbs to remove components from the EPS multi-layer PC board, as those tools may damage it.

You'll need the following supplies for the mod:

solder
33k-Ohm (22k-Ohm for 6-dB boost) 1/4W 5% Resistors — 2 each
56 pF (75 pF for 6-dB boost) 50V 5% Ceramic Capacitor — 2 each
miniature shrink wrap for disc type capacitor leads
PC board flux remover

Don't be tempted to use a lower or unknown tolerance capacitor if that's all you have on hand. The capacitor is part of a low-pass filter and a +20-80% type ceramic capacitor would seriously affect the cutoff frequency of that filter. The result could be either a loss of high-end response or excessive ultrasonic frequencies.

We're now ready to begin the mod by disassembling the EPS. First, remove all connectors from the rear of the EPS. (Especially the power cord!) Now, carefully flip over the EPS onto a soft surface (a couch or bed will do fine) and remove the 10 Phillips head screws located 2-1/2 and 7 inches from the front of the instrument. Holding the keys in place, flip the instrument back over. Use the adjustable wrench to remove the 5 jack nuts for jacks Audio In through Footswitch. Use the #2 Hex Allen Wrench to remove the four screws from the faceplate. You can pop open the front of the EPS with little force by holding both ends of the faceplate, lifting it up and back towards the rear of the instrument. Locate a connector labeled J7 — Keyboard and carefully remove it from the PC board. Now slide the keyboard out toward the front, underneath the two posts used for securing the faceplate. Put the keyboard aside, keys down.

Just to the left of the Footswitch jack is a pair of transistors with heatsinks labeled Q1 and Q2. In between those two resistors is a grounding lug for the EMI shield underneath the PC board. Remove this screw carefully because it has a lock washer on it that could easily come off and find its way into some remote corner of your EPS. You need to remove all cables going to the PC board. These connections are J2 — Disk, J6 — Auxiliary Expansion (if SCSI is installed), J8 — Display, J9 — Wheels and J10 — Power. Remove the seven screws around the circumference of the PC board. You may need to remove the memory/SCSI expansion from the rear, though I was able to slide it off of the connector as I pulled out the PC board. You can pull out the board by flipping it up toward the front and pulling toward you until the jacks are pulled out of their holes.

The illustration shows a component-side view of the area of interest, oriented as if you were facing the rear of the PC board where the jacks are located. Find U61, a 14-pin DIP, which is to the left of a daughtercard. We will be replacing R122, R134, C121 and C136. Unfortunately, these labels are underneath the components so you'll have to use the diagram as your guide. The resistors to be removed are the only 11 kohms in the area, but the 150 pF capacitors are not. Remove the specified resistors and capacitors with your desoldering tool. Verify the correct reference numbers on the PC board where the parts were removed. There are two options with this mod. If a 6-dB boost is sufficient for your needs, then use 22k-Ohm resistors and 75 pF capacitors to replace the ones just removed. If you prefer a 9-dB boost, then use 33k-Ohm resistors and 56 pF capacitors. Ideally we'd use a 50 pF capacitor to retain the exact same cutoff for the low pass filter, but no such animal exists. According to my rough measurements, the

larger 56 pF capacitor reduces the output by -1.22 dB at 20 kHz instead of -1.09 db in the original circuit. You won't hear the difference. If your replacement capacitors are not the axial type then use the miniature shrink wrap to guard to leads from contact with the PC board, as there is a feedthrough beneath C121. After soldering, clean the PC board with isopropyl alcohol or your other favorite non-CFC cleaner.

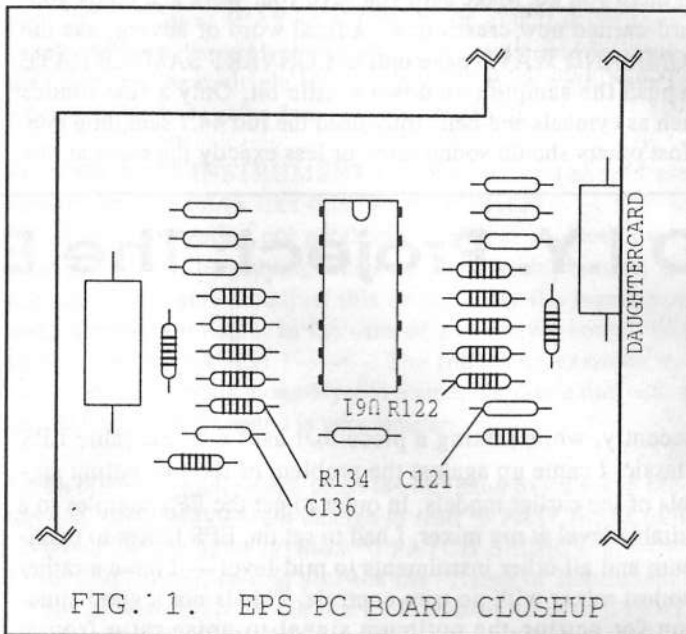


FIG. 1. EPS PC BOARD CLOSEUP

You can now reassemble your EPS. Angle the PC board back into place and replace the 7 screws and 5 jack nuts. Replace the EMI shield grounding screw and lockwasher. Reconnect J2, J8, J9 and J10 to their proper positions. Make sure that the flat ribbon cables are oriented properly. The red line on the ribbon cable denotes line 1 to mate up with the numeral 1 silk-screened on the PC board. J2 and J6 are both 34-pin cables. J2 goes to your floppy drive and J6 goes to your SCSI interface, if installed. Now slide the keyboard back into place and reconnect J7. I found it easier to screw down the keyboard assembly by propping the instrument upright and putting in the screws from the bottom, since it tends to not line up properly if assembled face down. The top level on your keyboard stand may be a good place for doing this. Replace all 10 screws to hold down the keyboard. Double check all connections before you replace the four hex screws on the EPS faceplate.

When you reconnect your EPS and power it up, you'll notice a definite boost in the output level. This boost is in effect whether you use the line outs or use the left out as a headphone amp, so be careful with the volume slider. This is probably one of the simplest mods you can make to your EPS, and it's well worth it. ■

Bio: John Loffink designs digital hardware and DSP software for a large U.S. space agency. His home MIDI studio houses a few pieces of equipment that have never been modified.

Putting the DP/4 to Work

Rhythm Tracks

Michael Harvey

The first step in recording a typical pop song is to lay down the basic rhythm tracks. With a band, the members simply troop into the studio, pick up their instruments and play. Depending on the quality of the performances, some of these parts may survive to the final mix. Unless the artist and producer are aiming for an unadulterated live feel, however, the basic rhythm tracks are usually supplemented or even replaced by subsequent overdubs. It is not uncommon for every part but the drum kit to be re-recorded during the course of a typical commercial project.

In future articles, we will explore uses for the DP/4 in band situations and at how to best record specific instruments. Initially, though, we'll assume the most basic arrangement possible: a one-man-band-producer-engineer working with a sequenced rhythm section. Rhythm tracking in this case consists of recording a premix version of a sequence to serve as a guide for the overdubs to follow: vocals, acoustic instruments, solos. At this point, the sequence can remain a sketch, leaving some "creative space" allows for ideas to develop and be incorporated as the project unfolds. Remember, though, once you start committing music to tape, you are locked into your arrangement and tempos. Do your experimenting with length, song structure, tempos, and time signatures now. (This would correspond to "pre-production" for a band.)

Unless your sequence is already fully realized, it may sound flat or sterile at this point. Perhaps not all your sound modules have onboard effects. Or perhaps the mix needs to be just a little punchier, more in your face. Since we will be discarding these tracks later, we don't want to invest too much time tweaking them. Nevertheless, there are some simple ways to give them life, an investment that will help inspire your vocalists and musicians (in this case, you) to deliver strong, informed performances. It should come as no surprise that the DP/4 is perfect for the job.

Last time (Issue #105), we set up the DP/4 for this task: we calibrated levels, wired it into our system, and built a framework for the necessary patch. Since this patch essentially split the DP/4 in two — into an effects processor and a signal processor — we called the patch "Schizoid." Assuming you have used your DP/4 since the last article, go ahead and load "Schizoid" as the active patch. (Remember, it's a Config patch. Hint: If you want patches to load automatically as soon as you stop scrolling, press the SYSTEM/MIDI button and advance to parameter #55. Use the jog wheel to toggle "Auto-Load Preset (SelectMode) =" from "Off" to "On.")

The premix can be improved both by enhancing individual parts and by enhancing the entire mix. Sounds simple. In reality, the DP/4 can be used in limitless ways to achieve

these goals. Alas, paper and ink are not limitless; this article allows space to examine only one approach: we will use the processing group formed by units A and B (group AB) on the DP/4 to apply chorusing and some delay to "widen" individual parts in our premix. Next time, we'll use group CD to apply compression and enhancement to the entire mix.

Effect algorithms for group AB can be selected in one of two ways: we can choose directly from existing two-unit patches; alternatively, we can load one-unit algorithms into each unit individually. To save work, let's see if there are any two-unit patches we can use as a starting point. Press Unit button A. The jog wheel will now scroll through all 100 two-unit presets stored in the DP/4. (Refer to the manual to see a complete list.) To hear the different patches, start your sequence playing and use your mixer's effects loop to send signal to the DP/4. You may want to solo a few parts to hear the effect clearly — bass, drums and piano cover the spectrum nicely. As you scroll through the algorithms (assuming this wasn't the very first thing you did when you unpacked your DP/4!), you will be amazed at the range of possible effects.

Keep scrolling until you come to patch #41, "Detune & Spread." If you don't have "Auto-load" turned on, press SELECT to load the patch. The LCD window reveals that this algorithm applies chorus and delay to incoming signals. If you are monitoring your sequence, you will hear the bass spread out to occupy the entire stereo spectrum. You may also hear some increased sibilance or even a discrete echo if you are applying this effect to drums. Let's begin working with the chorus algorithm. Bypass all four units by pressing the CONFIG button twice. Now press Unit button A twice to reactivate it. Press the EDIT button to enter editing mode. (As the edits accumulate, be sure to save your work regularly. You can toggle between the most recently saved patch and your newly edited version by repeatedly pressing the EDIT button. This allows you to compare the two versions before committing to the altered patch by saving it.)

Chorus is a pitch-based effect that splits the input signal in two, rhythmically detuning and retuning one half, then recombining the dry and effected portions. The result is a "fattening" of the original signal. The DP/4's "8 Voice Chorus" algorithm offers a few additional twists. Instead of splitting the input signal in two, this algorithm effectively creates 8 copies of the input (4 on the left, 4 on the right), applying individual detuning and retuning to each copy. The algorithm also features a stereo delay that permits feedback between the left and right portions of the signal. The possible effects generated by this rich algorithm range from simulating an ensemble of players from a single source, to our goal: adding body to a sound.

As noted above, chorusing depends on a balance between the wet and dry signals. The effect is strongest when both signals are near the same level. Accordingly, most chorus presets on the DP/4 are programmed with a "Mix" setting somewhere around 50. Since we are using our mixer's effects loop to apply the chorusing, we will actually control the mixture between the wet and dry signals at the mixer itself. Normally, this would imply a fully wet Mix setting of 99. Since we are applying delay in series with the chorus, however, and since we want the delay to affect both the chorused and unchorused portions of the signal, we need to send a moderate amount of the dry signal "around" the chorus directly to the delay; a Mix setting around 70 will do the trick.

The next parameter page lets us set the rate and depth of detuning applied. The "Rate" determines how fast the chorus oscillates back and forth between tunings, while "Depth" determines how far apart those tunings are. These two parameters comprise the heart of the chorus effect. Play with the settings to explore their effect: a slow rate with a wide depth produces the aural equivalent of open-ocean swells; a fast rate with a wide depth is akin to riding a sonic roller coaster; and so on. For subtle fattening of sounds, I find that a moderately slow rate of about 10, combined with a moderately narrow depth of about 20 produces a pleasing effect across a wide variety of instruments.

Parameter "Stereo Spread" superimposes a stereo field on the signal. The higher the setting, the wider the field. Use this parameter to increase or decrease the amount of horizontal space an instrument takes up on your song's virtual sound stage (the simulated 3D space you create by panning instruments within the stereo field). For fattening, I find that a setting around 60 produces a pleasing "heft" to bass sounds without creating a wall of mud, while giving pianos and organs good presence. The remaining parameters control the behavior of the built-in delay. Since we will be applying delay separately, moderate settings can be used within the chorus. Try settings around 15, 10ms, 20ms, and 20 for "Regen," "Left Regen Time," "Right Regen Time" and "Delay Regen," respectively, to add interest to the chorus, without creating distinct delays.

We are now ready for the delay algorithm. Press Unit Button B twice in order to reactivate it. The LCD reminds us that this is a "Dual Delay." Since Unit B is the final stage in this processing chain, we want its output as hot as possible to maximize our signal-to-noise ratio. Start by setting the Volume parameter to 99. Remember that Units A and B are connected in series. Unit B will therefore apply its algorithm to the full output from Unit A. Since we gave Unit A a Mix setting of 70, this output is a mixture of wet (in this case, chorused) and dry signal. For the finished patch, we are striving for a complex sonic stew consisting of chorused copies of the original signal, delayed copies of the original signal, and delayed copies of the chorused signal... We can use the Mix parameter for Unit B to control the balance between these various ele-

ments. If we set the Mix value to 99, the entire signal will be delayed, an interesting result but not quite what we're after. A Mix setting around 60 produces the desired effect.

The "Dual Delay" algorithm allows us complete control of two independent delay lines, one for the left channel and one for the right. The two lines, furthermore, can interact, with the output of one line feeding back into the input of the other. With long delay times, this "cross-regeneration" can be used to create swirling, stereo ping-pong effects. For our purposes, we can use short delay times to simultaneously add width and transparency to selected sounds.

Somewhere between 15 and 30 milliseconds lies the threshold at which a delayed sound is heard (by humans, at least) as a distinct copy rather than part of the original signal. Delay times under this threshold lead to a perceived widening of the original sound and can actually be used to place a sound within the stereo field much more precisely than level-based panning. For the current patch, delay times of 20ms and 30ms work well for the left and right channels respectively, with "Regen" amounts of 10 and 15. Leave the "Pan" settings to -99 and +99 for a wide, airy sound. A modest setting of 20 for the "Cross Regen" parameter adds a barely perceptible sense of depth. The "Regen Damping" parameter can be left at "0" since the feedback signals our patch creates are too short to reveal any high frequency roll-off.

If you haven't done so already, now is a good time to save your work. (Be sure to save the entire patch as a Config preset.) Since group AB also works well as a stand-alone patch for synth pads and bass sounds, you might want to save it as a separate two-unit preset. To do so, press Unit Button A and then the WRITE/COPY button. Pick a revealing name like "Punchy Bass" or the like for your new patch.

Assuming that you are still listening to your sequence, begin applying small amounts of "Schizoid" to individual parts in your mix via your mixer's effect sends. Bass, kick drum, synths, even piano sounds, can all benefit. The adage, "All good things in moderation," applies particularly well to effects processing, however. Be selective. Improving one or two parts can create a surprising improvement in the entire mix. Speaking of which, next time we'll turn the DP/4 loose on the entire mix itself and hear how this amazing box can bring snap and sparkle to your song. ■



Bio: Michael Harvey earns his living as the Business Manager for Consumer Products for Microsoft Sweden. He spends his living on grown-up toys from Ensoniq and other companies in the military-industrial-musical complex.

Hardwire Sounds 1A & 1B

Pat Finnigan

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Looks like everybody's jumping onto the SQ sound bandwagon. Coupla years ago you couldn't find a third-party company who could/would offer SQ sounds, and given the quality of Ensoniq SQ sound cards, there wasn't much of a reason to consider entering that particular market niche.

Anyway, it's a given that if you've got one Ensoniq keyboard, chances are you've got another Ensoniq keyboard sitting on the same keyboard stand. So the only question is what format to offer the sounds ("Excuse me, sir, what's the model of your other Ensoniq keyboard?"), and this year we're literally seeing an explosion of SQ series sounds. And guess why? Half of the Ensoniq current keyboard line, at least the affordable half (for those of us with mortgages) is an SQ variant: if you factor in the 21-voice earlier series, well, all of a sudden, it's become a market of entry: one set of patches works with 7 instruments.

This month we see how well the *Hardwire* sets work with the SQ's. Interesting pads, a punnet square of bank and screen sound locations, promotional sheets of other sound offerings, OK, the usual documentation, and 5 sheets of sound description and modulation routings. Good docs, not the laser stuff we'd expect for \$65, but quite usable and very explanatory. I'll typically read the docs first just to get a handle on where the programmer's coming from and where the sounds are going before I load a set and begin dissection: "When all else fails, read the owner's manual..."

HardWire 1A:

The Roses: "Phat Boy" is a great Juno 106 anabrass pad with a perfect low-to-mellow filter choke applied for warm fills without taking over your mix. "Bass-X" is a good starting point for 21-voicers to bag a fretless sound without craving the "fretless" expansion wave of the 32-voice siblings. "Alien Pod" demonstrates how carefully you have to set flange parameters (especially feedback!) in the effects section before self-oscillation demonstrates how the dynamic range of the SQ's is greater than your amp and speakers' dynamic range. This patch won't blow your speakers, as it's pretty carefully sculpted, but roll the mod wheel around a little bit and you'll get some idea of the self-oscillation potential of

the effects DSP onboard. "Andromeda" is the definitive "Forbidden Planet" sound wash: I can almost see Robby the Robot motoring around with Leslie Nielsen in this one. The obligatory Megawave program-as-dance-loop is represented with "Killer Radio," although I couldn't find the 2 and 4: you don't dance when you sit behind a B-3, so I wouldn't know. A first: 7 extra drum kits. True, the SQ's give you 20 percussion kits, but consequently, nobody does drums. So there's some personal interpretation of the 808 school, fusion, rock and live kits represented. Nothing totally rad, but variations on the top 20 programs (81-99) are welcome, as drum mapping is a bit more involved than the occasional tweaks we do on ROM sounds.

The Thorns: "B-3 Pedals" ain't: this is a Hammond Organ sound again. "Real Rhodes" ain't: just another FM piano tacked onto a mellow un-Rhodes wave. "Real Rhodes 2" is a variation of "Real Rhodes"; a bit closer but no more convincing. "Studio EP" is "FM Tines" with a different reverb algorithm. "DX Ballad Split" has the telltale annoying bass tick present when a VCA is shut down before a filter envelope closes. The tick is desirable on certain B-3 patches for key click: it's a pain in the arse when it shows up on other programs like "Pno/BassSplit" I and II, where the reverb amplifies the annoyance to an unusable point. "Jazz Split 3" has filter Fc so high the entire program hisses on keydown and disappears when the envelope closes on key-up. "Additive B-3" is supposed to add an octave harmonic, but the harmonic is just flat enough that you'd bust the mod wheel trying to get it in tune. The pianos (40-52) are disappointing. Given, the original piano wavset is dated, but I've gotten very credible piano emulations with a slow randomized chorus to give the illusion of beating frequencies among the 2-3 strings of a single piano note. These improprieties can certainly be edited out, but shouldn't be there in the first place at this level of programming.

Hardwire 1B

The Roses: "Blade Runner" is a cross between a filter sweep and an amplitude envelope mutually complementing each other into a muted analog string-muted brass pad. "Wind Song" is a chiff flute with an attack tick brought in by foot controller. "Ice Strings" is a string pad evolving into a sustained bell harmonic, "Martian Krybx" is a clavinet evolving into a flute with flute volume under mod wheel control; the mod wheel pulls one of the clav waves up a 5th at the same time ("So it's not just a clever name, eh?"). "Sail Away" with an envelope tweak is the identifiable sound from the song/commercial of the same name. "Marimba" has reverb

depth under the mod wheel, "Finale Hit" is an Orch stab with a crash cymbal added at high velocity, lot of modulation routings for templates here.

The Thorns: The "Soprano Sax" still sounds like its parent oboe wave, the "Bari Sax" sounds just like the "Tenor Sax" without even an octave transposition to make any distinguishable difference. And as we all know, bari saxes are considerably larger (and heavier, marching band members) than tenors, and consequently sound lower (scored a 4th lower), so what gives? "Muted Trumpet" sounds like a standard trumpet through a constrictive HP filter, and editing filter parameters doesn't help much (some things are only possible with expansion waves, I guess), "Electric Violin" sounds like a loud violin with effects. "Tympani," well, somebody change the calfskin...

These collections represent a good starting point to hack and tweak from, as there's good patches to use as templates. Changing waves and simple but effective editing can give some novel sounds: for example, try "Martian Krybx," swap the transwaves for the clav and vocal oohs, change the octave for the oohs, and modulate loop points on those transwaves with the mod wheel and foot pedal, and you start to get the picture. Not to gloss over the work that's present here, I'm sure that quality time has been spent on this series: it's

just the sounds don't reflect it. It's hard not to hear the ticks and hisses from some of the patches, and at \$65, this is an oversight. I loaded the collections into both my SQ-1 and SQ-2 32-voice, and as with previous reviews of other wares, they sounded identical.

This is a good first offering but seems a little pricey to me, and with the time I'd spend editing out the undesirable elements, doesn't represent the value I anticipated. Still, 160 sounds from Malvern will set you back \$100, but you get to keep the card. It's good to see the aftermarket exploding with SQ sounds. I can't help but think this set was rushed to market just a little bit too soon. Ensoniq has been accused of doing that too (the VFX), so these guys are keeping very good company.



In the interim, I look forward to Hardwire IIA & IIB... ■

Bio: Pat Finnigan is a service tech turned musician who writes secret messages in sequences on his EPSs.



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Trick Shuffling

Sleight-of-Hand on the KS-32 and Others

Jeff Jetton

Somewhere between even eighth or sixteenth notes and even triplets lies a rhythmic twilight zone, neither completely straight nor completely swung. This "in-between" shuffle can be heard on everything from Stevie Wonder's *Superstition* to Lisa Stansfield's *All Around the World* to Dwight Yoakam's *It Only Hurts Me When I Cry*. Although nothing in the Ensoniq line currently offers the adjustable swing percentage found in many drum machines, it's possible to duplicate the same effect with a bit of editing trickery. I'll be using a KS-32 for specific examples, but these general techniques should work on many other Ensoniq workstations. As in your owner's manual, the "bank" and "screen" terms refer to the locations of certain editing functions, once you're in "Edit Seq/Preset" mode.

First, we'll need a simple pattern to experiment with. Find a nice, empty sequence/preset location, initialize it in 4/4, and assign a drumset like "Latin Drums" (ROM 86) to track one. Set your tempo in the vicinity of 90 beats per minute. For sequencing drums, I find it easiest to play one or two parts at a time, layering them on the same track as I go using the "record = add" mode found on bank 1, screen 1. For more editing flexibility, you can also play the parts on separate tracks, and then merge them to one track when you're satisfied (bank 5, screen 3). If you use this last method, be sure to erase or mute the extra drum tracks. Play the kick drum on every quarter note for two measures and play the snare drum on the backbeat (the second and fourth beat of each measure). For the hi-hat part, play straight sixteenth notes using two different keys. Start with F3 (the third F from the left), then E3, then F3 again, and so on, alternating notes so that the F hi-hat falls on every eighth note, and the E hi-hat is on the "upbeats" in between. Now quantize the whole enchilada to the nearest sixteenth note.

This method of alternating the notes of the hi-hat part is useful not only because it makes quick passages easier to play, but also because it allows us to edit the upbeats separately. To achieve the adjustable shuffle, all that's needed is to delay these upbeats by whatever amount is necessary. This should be a simple matter of accessing the track shift function and shifting just that one note. But noooooo! The current KS-32 operating system won't let you set a track range when shifting. Instead we'll have to move that one note to a free track, shift the track in time, and then merge it back to the original track.

Access copy track (bank 5, screen 1) and press enter. For this example, we'll copy to track two. Set the track range so that only the "upbeats" hi-hat note (E3) is copied. You could use the arrows to set this range, but it's much simpler to use the keyboard shortcut of playing E3 twice. Now press enter two times to start the copying process, and then press enter again to keep what you've done.

If you play the sequence as it stands, you'll hear a bizarre flanging effect on the upbeats. That's due to the original and copy playing at once, which is a cool effect, but not what we want. Erase the original E3 note on track one using the track erase function (bank 5, screen 3), restricting the erase range as before.

Access the track shift function under bank 5, screen 5, and press enter. Make sure "Track = 2" is displayed. Press enter again and you'll be asked to set the number of clocks. Since, at 96 pulses per quarter (ppq), each 4/4 beat contains 96 clocks, a sixteenth note takes up 24 clocks. To create a standard, triplet-feel shuffle, we need to move the track ahead by 8 clocks. Why? Well, in a standard shuffle, the upbeats fall on the third note of a sixteenth-note triplet. At 96 ppq, each triplet note takes up 16 clocks of space, putting this third note 32 clocks from the first. Since our upbeats are currently 24 clocks from the notes preceding them, they need 8 more clocks.

But we don't want a standard shuffle, so instead of +08, shift the track by +04, which will put it smack-dab between normal quantizing values. Technically, that's known as a swing percentage of 62.5%. You can merge this track back to track one, and then erase track two, or, if you have room, keep the tracks separate for later editing. You can't hurt anything by experimenting with different clock values, just remember that shifting notes in a positive direction causes the notes to occur later, or drag and a negative direction places the notes earlier, or rushes them. If you shift by +06 and later wish you had shifted by +05, just shift by -01. For an eighth-note swing feel, just double all values.

It's more difficult to use this trick on kick or snare parts, since you must identify every upbeat and play them on separate keys. Non-drum parts are even trickier. Usually it's sufficient to only alter the "feel" elements like hi-hat or shaker. A slightly swung tambourine part, for instance, can do wonders to liven up a stiff, quantized sequence.

This method of shifting only sections of a track can also be used to lay back the snare drum for a realistic r&b feel. Slightly rushing the upper notes of a track while slightly dragging the lower ones also sounds great in many situations. The same techniques can be used to set ranges for the transpose function, which is useful for re-mapping drums or moving notes of a bass track so that they never fall below the low E of a real four string bass. ■

Bio: Nashville-based keyboardist Jeff Jetton currently tours with Liberty recording artist John Berry.

Sonic Derivations - VFX-sds and SDs

Patch: Empire Brass

James Grote

Upon this occasion, I wish to divulge and possibly digress on the topic of creating a brass ensemble within the realm of the Ensoniq SD series architecture. Let me introduce my latest patch, EMPIRE BRASS. EMPIRE BRASS is a full blast yet authentic sounding brass ensemble for the VFX-SD (and SD-1). Go ahead and program it, play it, and then, if you want, return and read the rest of this article.

When I programmed EMPIRE BRASS, I was looking for a full, distinctive brass fanfare sound that would live in a large concert hall. An important goal of mine was to maintain that critical realistic edge, hence no sawtooth waveforms at all. To obtain the basic sound was not difficult. I layered several individual brass instruments together, i.e. a trumpet and a French horn. Then I added the Uni-Brass wave to thicken the sound without losing realism. Finally, I added the Planet-X transwave to add some spit and brightness to complement the trumpet portion of the brass ensemble.

After piling all of these waves together, the sound I was looking for started to take shape. Still, this was only the beginning. What I needed to do was concentrate on each individual sound and do everything I could to increase its realism. That would further increase the realistic effect of the whole ensemble. One of the strongest components of the ensemble sound is the trumpet, so I first concentrated on that element.

Soloing the trumpet wave from the crowd, I began to add subtle inflections to it. First, I added a bit a random pitch wavering to the sound. A human playing a trumpet will consciously or unconsciously vary the pitch a bit in the course of sustaining a note. I accomplished this by applying a bit of the NOISE modulation source to the pitch page. This is a subtle but important detail.

Another feature I applied to the trumpet wave was to give it a NON-equal tempered tuning. Brass wind instruments are, by nature, not tuned to equal temperament. The physics of resonating a twisted metal pipe lend to what's called "pure temperament." What this means is that there is not an "equal" space between each of the twelve notes in an octave. Skilled players can, with their lips, bend the pitch to approach equal temperament as they actually play. Anyway, the point of this is show that a realistic trumpet sound should not be perfectly equal-tempered.

Therefore, I use a custom pitch table for the trumpet wave. I've included a portion of the Pitch table that I use (see Fig. 1). On the Select Voice Page, select EDIT PITCH TABLE, and enter the octave of pitches from Fig. 1. Then select Calculator and EXTRAPOLATE from C4 to B4, making every

octave follow this pattern. There's no exact methodology in the tuning of this table. I merely shifted each note a little up or down, and based my decisions on how it sounds. Once again, the effect of this slight de-tuning is subtle but, in my opinion, important. You can solo just the trumpet in my patch by holding the Right patch select (PS) button. Play some trumpet part and hear the authenticity gained by the custom pitch table. The pitch table is only applied to the trumpet, because I don't want all of the waves to be tuned exactly. In the complete ensemble, the trumpet is not exactly in tune with the other horns, adding another realistic edge to the sound.

For each of the remaining oscillators, I applied a touch of the NOISE modulator, but with slightly different rates. In general, almost any wind instruments should have this subtle variation in pitch. I panned the different instruments left and right a bit to create some stereo spread.

As I stated at the beginning, I wanted a brass ensemble that was in a big concert hall. Thus the choice of CONCERT REVERB. Some people might think I'm applying too much reverb, but I would have to disagree. It really sounds like the instruments are being played in a hall as opposed to dry instruments having some reverb artificially added. As mentioned earlier, the Right PS selects a solo trumpet, the Left PS selects a solo French horn, and both select a bright trumpet section without the French horn. Pushing the Timbre slider up increases the brightness of the instruments.

Although there may seem to be a lot of detail and work in a patch such as this, each detail is logically thought out and added as I proceed from initial concept to the final patch. My basic approach is to start with the raw waves which will be the foundation of a sound, then slowly add more and more subtle details to fine tune the realism of the sound. Overall, these little details add together to form a more authentic sound. This relatively straight forward method is what I do to create most of my "real sound" patches. Anyway, I hope this article gives you some ideas to create or improve upon your own patches. Thus concludes this installment of Sonic Derivations.

Enter this One-Octave of pitches, then select Calculator and EXTRAPOLATE from C4 to B4, making every octave follow this pattern. ■

Bio: Jim Grote offers a disk of 60 of his original VFX/SD sounds — see classifieds. He's been programming and playing synthesizers for years. He is fascinated equally by science and art, thinking and feeling, programming and unbridled jamming.

Fig. 1 Custom Pitch Table

Actual			Actual		
Key	Key	Cents	Key	Key	Cents
C4 =	C4	and 0	F4# =	F4#	and 12
C4# =	C4#	and 7	G4 =	G4	and 9
D4 =	C4#	and 90	G4# =	G4#	and 8
D4# =	D4	and 95	A4 =	A4	and 6
E4 =	E4	and 13	A4# =	A4	and 88
F4 =	E4	and 98	B4 =	B4	and 3

WAVES	1	2	3	4	5	6
Wave	Trumpet	FrnchHrn	UniBrass	Planet-X	EDIT-PITCH-TABLE	
Wave Class	BrassSnd	BrassSnd	BrassSnd	Translate		
Delay	0	0	0	0		
Start	0	0	0	99		
Vel Start Mod	0	0	0	-		

MOD MIXER	1	2	3	4	5	6
SRC-1	-	-	-	-		
SRC-2	-	-	-	-		
SRC-2 Scale	-	-	-	-		
SRC-2 Shape	-	-	-	-		

PITCH	1	2	3	4	5	6
Octave	0	0	0	+1		
Semitone	0	0	0	0		
Fine	0	0	+7	0		
Pitch Table	Custom	System	System	Custom		

PITCH MODS	1	2	3	4	5	6
MODSRC	Noise	Noise	-	Noise		
MODAMT	+8	+8	0	+6		
Glide	None	None	None	None		
ENV1	0	0	0	-15		
LFO1	+4	+2	+1	-3		

FILTER 1	1	2	3	4	5	6
Mode	LP/2	LP/3	LP/2	LP/3		
Cutoff	0	97	100	81		
KBD	+36	0	0	0		
MODSRC	-	Press	Press	Mixer		
MODAMT	0	+99	+20	+37		
ENV2	+99	0	0	+12		

FILTER 2	1	2	3	4	5	6
Mode	HP/2	HP/1	LP/2	HP/1		
Cutoff	0	25	90	65		
KBD	0	0	0	0		
MODSRC	-	Press	Press	Timbre		
MODAMT	0	+8	+8	+99		
ENV2	0	0	0	0		

OUTPUT	1	2	3	4	5	6
VOL	80	85	91	85		
MODSRC	-	-	-	Timbre		
MODAMT	0	0	0	-21		
KBD Scale	0	0	+35	-98		
LO/HI Key	-	-	E1-F3	G5-C7		
Dest Bus	FX1	FX1	FX1	FX1		
Pan	53	37	81	22		
MODSRC	-	-	Timbre	-		
MODAMT	0	0	+87	0		
Pre-Gain	On	On	On	On		
Voice Prior	Med	Med	Lo	Med		
Vel Thresh	0	0	0	0		

LFO	1	2	3	4	5	6
Rate	36	34	34	30		
MODSRC	Wi+Pr	Press	-	Wi+Pr		
MODAMT	+7	+1	0	+5		
Level	0	0	0	4		
MODSRC	Wi+Pr	Press	Wi+Pr	Wi+Pr		
Delay	0	0	0	0		
Waveshape	Sine/Trl	Sine	Sine	Triangle		
Restart	On	Off	Off	Off		
Noise SRC RT	89	88	0	88		

SD & VFX Prog: EMPIREBRASS

By: Jim Grote

NOTES:

Moving Timbre Slider up brightens sound.
 Right Patch Select solos trumpet.
 Left Patch Select solos French horn.
 Both Patch Selects gives bright trumpet.

SELECT VOICE

00	1	2	3	4
0*	1			
*0		2		
**	1			4

ENV1

	1	2	3	4	5	6
Initial	-	-	-	5		
Peak	-	-	-	0		
Break 1	-	-	-	0		
Break 2	-	-	-	0		
Sustain	-	-	-	5		
Attack	-	-	-	5		
Decay 1	-	-	-	0		
Decay 2	-	-	-	0		
Decay 3	-	-	-	0		
Release	-	-	-	5		
KBD Track	-	-	-	0		
Vel Curve	-	-	-	Convex2		
Mode	-	-	-	Normal		
Vel-Level	-	-	-	0		
Vel-Attack	-	-	-	0		

ENV2

	1	2	3	4	5	6
Initial	99	99	85	50		
Peak	99	99	99	0		
Break 1	58	99	99	0		
Break 2	83	99	99	0		
Sustain	99	99	99	0		
Attack	0	0	10	12		
Decay 1	29	48	48	51		
Decay 2	27	58	58	68		
Decay 3	53	72	72	80		
Release	31	31	31	37		
KBD Track	0	+16	+16	0		
Vel Curve	Cnvc3	Linear	Linear	Cnvc2		
Mode	Normal	Normal	Normal	Normal		
Vel-Level	61	50	50	0		
Vel-Attack	0	0	0	0		

ENV3

	1	2	3	4	5	6
Initial	99	85	85	0		
Peak	99	99	99	99		
Break 1	99	0	99	99		
Break 2	99	0	99	99		
Sustain	99	0	99	99		
Attack	0	10	5	3		
Decay 1	37	75	0	0		
Decay 2	30	0	0	0		
Decay 3	52	0	0	0		
Release	19	15	30	30		
KBD Track	0	0	+30	0		
Vel Curve	Cnvc2	Cnvc2	Cnvc2	Cnvc2		
Mode	Normal	Normal	Normal	Normal		
Vel-Level	0	11	31	14		
Vel-Attack	0	30	0	1		

PGM CONTROL

Pitch Table	On
Bend Range	**
Delay	X4
Restrike	19
Glide Time	0

EFFECTS (1)

Effect	Concert Reverb
Decay Time	46
FX1	99
FX2	25

EFFECTS (2)

Diffusion	47
Pre-Delay	36
Early Refl Level	52
Time	0

EFFECTS (3)

FX2 Mode	Normal Stereo Snd
LF Decay	0
Reverb HF Damping	29

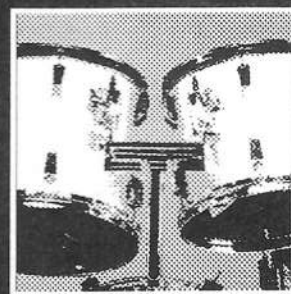
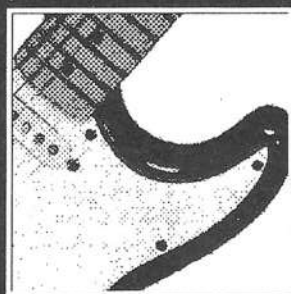
PERFORMANCE

Timbre	0
Release	0

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Synthesizing the Clavinet

Kirk Slinkard

I've recently started a new hobby — collecting ancient musical instruments and related devices (1960s — 1980s). Among my recent acquisitions is a Hohner Clavinet model D6. I've heard a lot of different clavinet patches from commercial sources and in the *Hacker*, but they were all artistic interpretations — not one of them was a realistic imitative patch. So I hooked up my Hohner and my SQ-80 and VFX-SD all into the same amp with no equalization so that I could do some in-depth A/B type tweaking and adjusting to get a set of imitative patches that were as accurate as possible. It was a fairly tedious operation matching filter settings, envelope decays, etc. across the keyboard, but I ended up with three patches that can be substituted for the real thing, and one reasonable facsimile. So this becomes my first attempt at a "quadra-lingual" synthesizer article.

Clavinet and Sticks

In case you don't know, the Hohner Clavinet D6 is an electrophonic descendant of the clavichord. The clavinet is just basically a small, portable version of the clavichord. I saw an

acoustic version of the clavinet played in a period movie, so it would seem that it's been around for a while. The Hohner D6 version isn't acoustic, but electrophonic, meaning that the physical vibrations of the strings are converted into electronic signals by pickups (magnetic in this case, like with most electric guitars). Very roughly, it's similar in size and shape to most Ensoniq instruments. The ones that I've seen in music videos and in most advertisements have wood-grained hinged top panels and four screw-in legs that can be stored inside the instrument. Mine is a more recent model, having four rubber feet and being covered in black vinyl panels, black padded panels, and black-painted metal panels, making its appearance a bit closer to that of Ensoniq instruments. Its keyboard has one note less than the usual five-octave C-to-C keyboards common on synthesizers and organs. The Hohner has F as the lowest note and E as the highest.

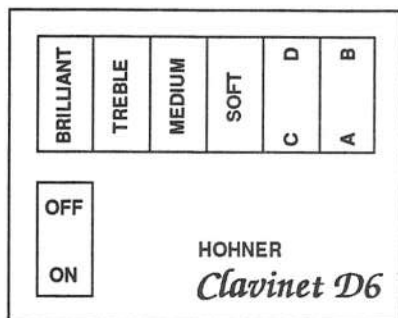
Decades ago, due to its compactness, the clavinet became a popular rock and jazz band substitute for general harpsichord-type applications, and its own unique sound also made it popular on its own merits. As I first listened to mine, I was

ESQ-1 PROG: ESQCLV										By: Kirk Slinkard	
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH			
OSC 1	-1	00	00	KICK	OFF	-	OFF	-			
OSC 2	-2	01	00	SQUARE	OFF	-	OFF	-			
OSC 3	-1	00	00	VOICE1	OFF	-	OFF	-			
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH					
DCA 1	50	ON	OFF	-	OFF	-					
DCA 2	57	ON	OFF	-	OFF	-					
DCA 3	52	ON	OFF	-	OFF	-					
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH				
FILTER	22	00	05	ENV2	+63	VEL	-03				
	FINAL VOL	PAN	PAN MOD	DEPTH							
DCA 4	63	08	OFF	-							
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD			
LFO 1	-	-	-	-	-	-	-	-			
LFO 2	-	-	-	-	-	-	-	-			
LFO 3	-	-	-	-	-	-	-	-			
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK	
ENV 1	-	-	-	-	-	-	-	-	-	-	
ENV 2	+63	+48	+10	00	00	00	23	57	16	23	
ENV 3	-	-	-	-	-	-	-	-	-	-	
ENV 4	+63	+31	+00	59	00	00	63	63	13	34	
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC			
MODES	ON	OFF	OFF	0	OFF	OFF	ON	OFF			
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY				
	OFF	-	OFF	-	OFF	-	-				

SQ-80 PROG: SQ8CLV										By: Kirk Slinkard	
	OCT	SEMI	FINE	WAVE	MOD#1	DEPTH	MOD#2	DEPTH			
OSC 1	-1	00	00	CLAV	OFF	-	OFF	-			
OSC 2	-	-	-	-	-	-	-	-			
OSC 3	-	-	-	-	-	-	-	-			
	LEVEL	OUTPUT	MOD#1	DEPTH	MOD#2	DEPTH					
DCA 1	60	ON	KBD	+03	OFF	-					
DCA 2	-	-	-	-	-	-					
DCA 3	-	-	-	-	-	-					
	FREQ	Q	KEYBD	MOD#1	DEPTH	MOD#2	DEPTH				
FILTER	22	00	05	ENV2	+63	VEL	-03				
	FINAL VOL	PAN	PAN MOD	DEPTH							
DCA 4	63	08	OFF	-							
	FREQ	RESET	HUMAN	WAV	L1	DELAY	L2	MOD			
LFO 1	-	-	-	-	-	-	-	-			
LFO 2	-	-	-	-	-	-	-	-			
LFO 3	-	-	-	-	-	-	-	-			
	L1	L2	L3	LV	T1V	T1	T2	T3	T4	TK	
ENV 1	-	-	-	-	-	-	-	-	-	-	
ENV 2	+63	+48	+10	00L	00	00	23	57	16	23	
ENV 3	-	-	-	-	-	-	-	-	-	-	
ENV 4	+63	+31	+00	59L	00	00	63	63	13	34	
	SYNC	AM	MONO	GLIDE	VC	ENV	OSC	CYC			
MODES	OFF	OFF	OFF	0	OFF	OFF	ON	OFF			
	SPLIT/LAYER	S/L PRG	LAYER	L PRG	SPLIT	S PRG	SPLIT KEY				
	OFF	-	OFF	-	OFF	-	-				

struck by how similar its sound is to The Stick — a very close relative of the electric guitar. I looked inside, and sure enough, the strings are vibrated in almost exactly the same way as The Stick — when a key is depressed, a small rubber bumper attached to its bottom side pushes a string down against a raised metal fret near the end of the string where its tuning peg is, causing the length of the string between the fret and the bridge to vibrate. A Stick player taps the strings against its fretboard with the tips of his fingers.

On the short length of the clavinet's strings, between the frets and the tuning pegs (underneath the keyboard), the strings are heavily interwoven with yarn which quickly damps the whole strings when the keys are released (The Stick uses a piece of felt above the first fret for this function). Unfortunately for my purposes here, the Hohner Clavinet D6 has a four-band equalizer with each band having its own on/off switch, plus two guitar-like pickup select switches to choose different combinations of its two really long pickups. Figure 1 shows the primary control panel, which is located to the left of the



keyboard. The volume slider panel is next to it, closer to the player. The pickup switches select between the treble pickup, the bass pickup, or both, and chooses whether or not they are in phase with each other. So these two switches give the

user a choice of four basic tones to send into the equalizer.

The clavinet also has a mechanical slider knob to the right of the keyboard which is used to apply a big macho strip of felt to all the strings close to the bridge (like where a guitarist would mute his strings with his hand). When activated, this makes all the notes very short and plucked-sounding. This combination of switches, including the mute, actually gives 120 sound variations (and that's not counting the volume control or the silence when all equalizer switches are off).

Waveforms

Rather than trying to do 480 patch sheets for this article, I thought I would settle for four that simulate typical, somewhat bright settings on the Clavinet — the settings that most closely match the Ensoniqs in tone color. This way, you can turn the filter cutoff frequency(s) up or down a little to simulate other more or less bright sounds. Ensoniq has already done the hardest part by supplying most of their synths with a waveform that appears to be a single-cycle sample from an actual Hohner Clavinet. On the SQ-80, this is called "CLAV," newer types have the "CLAV" and "CLAV.VAR" waves. The "CLAV.VAR" sounds brighter and more appropriate for a general clavinet patch of this particular kind,

SD & VFX Prog: CLAVINET D6

By: Kirk Slinkard

NOTES: For maximum authenticity, set velocity response to "soft."

WAVES		1
Wave	Clav.Var	
Wave Class	Waveform	
Delay	000	
Start	-	

SELECT VOICE	
00	1
0*	1
*0	1
**	1

MOD MIXER		1
SRC-1	-	
SRC-2	-	
SRC-2 Scale	-	
SRC-2 Shape	-	

ENV1		1
Initial	-	
Peak	-	
Break 1	-	
Break 2	-	
Sustain	-	
Attack	-	
Decay 1	-	
Decay 2	-	
Decay 3	-	
Release	-	
KBD Track	-	
Vel Curve	-	
Mode	-	
Vel-Level	-	
Vel-Attack	-	

PITCH		1
Octave	+0	
Semitone	+00	
Fine	+00	
Pitch Table	System	

PITCH MODS		1
MODSRC	Off	
MODAMT	-	
Glide	None	
ENV1	+00	
LFO1	+00	

ENV2		1
Initial	99	
Peak	80	
Break 1	21	
Break 2	21	
Sustain	21	
Attack	22	
Decay 1	68	
Decay 2	00	
Decay 3	00	
Release	25	
KBD Track	+16	
Vel Curve	Linear	
Mode	Normal	
Vel-Level	00	
Vel-Attack	00	

FILTER 1		1
Mode	LoPass/2	
Cutoff	032	
KBD	-04	
MODSRC	Veloc	
MODAMT	-05	
ENV2	+55	

ENV3		1
Initial	99	
Peak	49	
Break 1	00	
Break 2	00	
Sustain	00	
Attack	86	
Decay 1	96	
Decay 2	00	
Decay 3	00	
Release	14	
KBD Track	+37	
Vel Curve	Linear	
Mode	Normal	
Vel-Level	50	
Vel-Attack	00	

FILTER 2		1
Mode	LoPass/2	
Cutoff	032	
KBD	-04	
MODSRC	Veloc	
MODAMT	-05	
ENV2	+55	

OUTPUT		1
VOL	99	
MODSRC	Off	
MODAMT	-	
KBD Scale	+17	
LO/HI Key	C2-C7	
Dest Bus	Dry	
Pan	50	
MODSRC	Off	
MODAMT	-	
Pre-Gain	Off	
Voice Prior	Med	
Vel Thresh	+000	

PGM CONTROL	
Pitch Table	Off
Bend Range	**
Delay	X1
Restrike	00
Glide Time	00

LFO		1
Rate	-	
MODSRC	-	
MODAMT	-	
Level	-	
MODSRC	-	
Delay	-	
Waveshape	-	
Restart	-	
Noise SRC RT	-	

PERFORMANCE	
Timbre	00
Release	+00

EFFECTS — None

plus it's the closest match for the SQ-80's waveform.

The SQ-80's "CLAV" waveform produces a tone comparable to the Hohner D6 with the pickup select switches in the "CB" position, and only the "BRILLIANT" switch activated in the equalizer controls. The VFX's "CLAV.VAR" waveform sounds like a Hohner with its pickup switches in the "DA" setting and, in this case also, with only the "BRILLIANT" switch on in the equalizer. If you change the VFX's or SQ-1's waveform to "CLAV," it sounds as if you have changed the equalizer to have only the "SOFT" switch activated. On the down side, these waves don't change their tone across the keyboard in the quite the same manner that the Hohner does. Also, the Hohner has a more complex attack that I haven't been able to exactly duplicate here. And the Hohner changes its waveshape slightly as it is sustained (independently of brightness and amplitude decays). But don't worry too much about these differences, they're not really terribly significant. I never even realized they existed until I started doing these nit-picking A/B comparisons.

As for the ESQs, we'll have to come up with a substitute for the "CLAV" and "CLAV.VAR" waveforms. I figured that a logical starting point would be a narrow pulse wave — the real thing, not the questionable "PULSE" waveform supplied with this synthesizer (see pulse width modulation article in Issue #85). So the "SYNC" function is applied to oscillator 2 which is set to a "SQUARE" waveform, which ends up giving us a real variable pulse wave. To make it closer to an authentic clavinet tone, here it is combined with the "KICK" and "VOICE1" waveforms.

Filters and Amplitude

I used the VFX/SD1's and newer SQ's two filter sections together as a single 4-pole lowpass filter so that it would be easier to make all the patches as similar as possible (the ESQs and SQ-80 have this filter configuration only). The VFX/SD1 and newer SQ's velocity responses in the envelopes are set to linear, not only because the ESQs have only this type, but also because the actual clavinet responds to velocity in a linear fashion. Envelope decay times were adjusted separately for high notes and low notes, first for the filters and then for the amplifiers. I

sure am glad that I don't make patches for a living. Both the filter and amplifier envelopes have short release times to simulate the quick, but imperfect damping of the clavinet strings upon key release.

Miscellaneous

The Hohner Clavinet has a keyboard feel that I found to be surprisingly close to most organ and synthesizer keyboards. The main differences are that Hohner Clavinet keys offer just a little bit less resistance when you play them, and you can feel a little of the string vibration when you hold a key down, especially with the lower notes. So basically, playing one of these patches feels and sounds very close to an actual Hohner Clavinet D6, except that here you are missing 4 notes on the high end of the keyboard, and you have 5 extra notes on the bottom. Keep in mind that in many popular recordings, the clavinet gets some treble boost. To get this sound, just turn up the filter cutoff frequency(s) until it sounds right. If you mellow out the sound a little by lowering the filter cutoff frequency value(s), you can also use these patches in applications that call for a Stick. Since the D6 has a single output jack, these patches are all panned to the middle of the stereo field with no pan modulation. On the SQ-1 and VFX patch

SQ-1/2 & KS-32 Prog: CLAVINET D6

By: Kirk Slinkard

Notes: For maximum authenticity, set velocity response to "soft."

WAVE	1
Select Voice	On
Wave Class	Waveform
Wave	Clav.Var
Delay Time	000
Wave Direction	-
Start Index	-
MODSCR	-
MODAMT	-
Restrk Decay	00

LFO	1
LFO Speed	-
Noise Rate	-
Level	-
Delay	-
MODSRC	-
Wave	-
Restart	-

AMP	1
Initial	99
Peak	49
Break	00
Sustain	00
Attack	86
Decay 1	96
Decay 2	00
Release	14
Vel-Level	50
Vel-Attack	00
Vel Curve	Linear
Mode	Normal
KBD Track	+37

PITCH	1
Octave	+0
Semitone	+00
Fine	+00
ENV1	+00
LFO	+00
MODSCR	Off
MODAMT	-
KBD Pch Track	On
Glide	Off
Glide Time	-

FILTER	1
Filter 1	2Lo
Filter 2	2Lo
FC1 Cutoff	032
ENV 2	+55
FC1 KBD	-04
MODSCR	Veloc
MODAMT	-04
FC2 Cutoff	032
ENV2	+55
FC2 KBD	-04
FC1MOD-FC2	On

OUTPUT	1
VOL	99
Boost	Off
MODSRC	Off
MODAMT	-
KBD Scale	+17
Key Range	C2-C7
Output Bus	Dry
Priority	Medium
Pan	00
Vel window	000

ENV1	1
Initial	-
Peak	-
Break	-
Sustain	-
Attack	-
Decay 1	-
Decay 2	-
Release	-
Vel-Level	-
Vel-Attack	-
Vel Curve	-
Mode	-
KBD Track	-

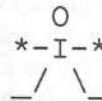
ENV2	1
Initial	99
Peak	80
Break	21
Sustain	21
Attack	22
Decay 1	68
Decay 2	00
Release	25
Vel-Level	00
Vel-Attack	00
Vel Curve	Linear
Mode	Normal
KBD Track	+16

EFFECTS — None

sheets, notice that the outputs are routed to the dry bus and no effects are specified. Like with a real clavinet, you have to choose your own effects (if any). These patches are designed to be very accurate and usable as they are, with no modifications, but I like to think of them as a place for you to start in making your own custom patches. May you clav long and prosper.

Mod You Later, good 'ol Kirk. ■

Bio: Kirk Slinkard hangs out near Denver, plays synthesizer, and collects and restores vintage rock stuff. His favorite color is ultraviolet and he's the same age as Marcia Brady (a year older than Kevin Arnold).



Classifieds

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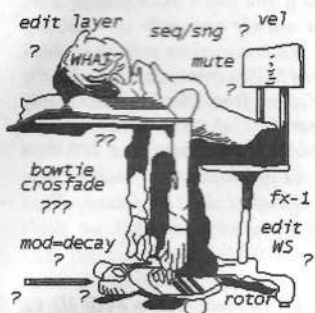
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The Interface

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

Electronic mail - GENie Network: TRANSONIQ, CompuServe: 73260,3353, Internet (via CS): 73260.3353@compuserve.com.

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. Resident answer-man is Clark Salisbury (CS). Letter publication is subject to space considerations.

T.H.:

I know how much you guys like getting ASR tips (and I know how much I like reading 'em), so I thought I'd send along two more that I read on the EPS Mailing List of Internet. But rather than me paraphrasing it and taking all the credit for the ideas, I'm including the [edited] Internet message itself, along with its rightful author:

"From: CROFOOT@CS.BU.EDU

"Well since we are sharing some tips and tricks I thought I would throw in one I just figured out. It pertains to sample editing and at first seems counter intuitive, but works much better.

"Most people edit sample end points before truncation (sample start is usually set perfectly by the sound exceeding the threshold). Assume you have a 4-second sound and you are manually in-ching up the end point to just the right point. This takes a long time and requires listening to the entire sample. I have come up with two solutions for this. First, while holding down the root key, use the pitch bend wheel to speed up the sample until close to the end and then let it fall to normal speed. This can be used as a form of scrubbing. (I rarely use pitch bend, so have even contemplated changing the global bend range to a higher value.)

"The second and better way of truncation is to move the start point instead of the end point. Repeatedly hit the key while slowly moving up the start point. When no more sound is heard (make sure not to lose any reverbs) then you are at the true end point.

"Now just arrow to the sample end screen and drop the slider all of the way down and it will automatically set to the start point you had set. Then go back to the start point screen and drop the same back to 0 with the data slider, then truncate. This is a quick way because you only have to listen to a millisecond of the sound to see if there is an attack instead of the entire sample multiple times. - Matthew"

Neat tips, I think. Hope you can use 'em in the Hacker! I checked with Matthew and he says, "I am glad that you enjoyed the tips. I myself was quite surprised after I tried them. It seemed so counter intuitive to be working from the front of the sample if I wanted to clip the end, but it worked great. Thanks for sending it off to Transoniq, as now more people will be able to use it. Regards, Matthew."

And as long as I've got your ear... (how many times have you read THAT before), I have a question: does anyone know how to "undo" or delete presets from a bank, outside of setting up a whole new bank? Once they're set up using "CREATE PRESET" they seem to be there forever. I have several live performance banks

where I created presets and no longer use or want them present (I don't want to slip and hit one of those by accident while performing). Now I can't get rid of them other than to overwrite them with "safer" presets.

Looking forward to the next - and every - issue.

Thanks!

Gerry Leone
Victoria, MN
G.LEONE@genie.geis.com

[CS - Thanks for the cool tips!]

Sorry, I know of no way to delete presets once they're created. You could, of course, re-create the bank from scratch, then re-save it, but I don't know if you'd find this any quicker than re-writing the presets as "safer" versions.]

Hello Clark!

For the Hacker: Hello hackers!

I just received the Feb 4 External Command Specification for ASR-10 at no charge! Thank you Ensoniq! The SCSI page was very interesting to read.

I'm very tired of dealing with floppy disks and slow data transfers via MIDI. I'm sure all future Advanced Sampling Recorders will have a SCSI interface (K2000 has). MIDI is too slow to transfer all the information we users require. SCSI will be the future MIDI!

Questions: 1) I just bought an IBM PS/1 486DX2 50MHz computer with 16-bit Soundblaster card (I think (or hope) it is today's PC standard). What kind (model and brand) of SCSI interface adapter (ISA) do I need to connect to ASR-10?

2) What SCSI address (0-7) are ASR-10 and my computer working on if I have this adapter?

3) Will companies of the "near future" support me with software for this configuration? As I understand (of the External Command Specification) SCSI communication is very similar to MIDI. Support for SCSI-MIDI should be easy to implement! Comments by software companies, please. (Any Sequencer vendors?)

4) I like Gary Giebler's Ensoniq Disk Manager very much, but floppy disks are too slow for both me and my ASR-10. How about an Ensoniq SCSI-MIDI Manager?

5) Why not replace new ASR-10 and the new TS-10 floppy disk drives with floptical disks (21MB on a 3.5" special-disks)? Does any hacker reading this (or Ensoniq), have experience about this?

Best regards,
Jesper Gummeson
(Internet Email: jesper@iss.se)

[CS - I'm afraid I'll have to plead ignorance on this one; I work almost entirely in the Macintosh world, so I have my own set of problems to deal with. (I do know, however, that the ASR-10 is permanently set to SCSI ID 3).

I'm passing your letter on to Ensoniq - I suspect someone there will have a pertinent comment or two.]

[Ensoniq - 1) Unfortunately the question is not what brand of SCSI interface should you buy, but what could you do if you had a SCSI interface on your PC. And the answer currently is - nothing with the ASR-10. We know of no software which supports any type of SCSI communication with the ASR-10. SampleVision, from Turtle Beach, only supports MIDI transfers of wave data. Perhaps you readers should contact them and let them know that you would like to see that package support SCSI data transfers in the future. Does anyone out there know anything that we don't know?

2) The ASR-10 is permanently set to SCSI ID #3 and your other SCSI devices can be set to any ID number other than that.

3) See above answer.

4) Perhaps Gary will - he'll have to answer for himself.

5) Unfortunately, floptical drives are considerable more expensive and consume much more power than conventional floppy drives. They are not necessarily able to support the Ensoniq disk format, which is not IBM compatible. We have obviously looked into them, but cannot support them until these issues are resolved/changed, which seems unlikely.]

Hello Transoniq Hacker!

After a lot of hard work, frustration, and, ultimately, satisfaction, I have finished Version 1 of SoundVert. What does it do? SoundVert is a conversion program that transforms Wave & SampleVision files into Giebler's format and changes Wave Files into SampleVision's format. In conjunction with the Ensoniq Disk Manager, you can record and edit sounds and then create diskettes all on your PC! This would be useful for any sampler or keyboard that reads Ensoniq disks. As a TS-10 owner, this has proved especially useful (now I can hold off purchasing a dedicated sampler... at least for a little while).

Currently, I am distributing SoundDemo which is a restricted version of SoundVert. SoundDemo is freeware while a registered version of SoundVert

1.0 is \$15.00. Please feel free to copy and distribute SoundDemo. Initially, you can get copies of SoundDemo on: Eagle Nest, (401)-353-3359 – my favorite local board; Sound Management BBS, (708)-949-6434 – my favorite audio board; CompUSA, (401)-823-9256 – my favorite free board, (except if it's a toll call).

If you have any problems finding it, you can email me at tim.dorcas@enest.com or leave a message on MIDILink or MIDI-Net. Happy music making!

Tim
INTERNET:tim.dorcas@enest.com

[CS – Cool.]

[Ensoniq – Sounds very interesting. We'll have to log on and take a look. Thanks for the support!]

Dear Hacker,

I would love to hear from someone who owns a KS-32 and uses the Galaxy librarian with it for sound storage, preferably someone who runs Galaxy on an AV Mac. I have a Centris (Quadra) 660 AV and have been dogged for months by what appear to be framing errors. The Opcode and Ensoniq tech lines have done all they can!

Call collect 303-443-6207 (evenings MST) or email (Internet) to: joe@gesualdo.colorado.edu.

Thanks!
Joe Isler

[CS – I've used Galaxy on a Mac IIci for quite some time without too many problems, so I'm afraid I don't really have a lot of insight (the only real difficulties I've experienced occurred when trying to use an older version of Galaxy with the newer Mac; since upgrading, these problems have pretty much disappeared). I have heard that you can experience problems if AppleTalk is active, but I'm not networked, so I have no direct experience with this.

If any of our readers has a clue as to what might be going on here, perhaps they'd be kind enough to share whatever info they may have...]

[Ensoniq – We have a hard time believing that Opcode can't help you, but we will try to look into this soon. Clark is right – leaving AppleTalk on could produce this kind of error. We'll call you when we have set up a test.]

Dear Hacker!

Do you know of any second source RAM cards for the SQ series? The original Ensoniq cards cost about \$160 which seems rather expensive compared to RAM cards advertised with one bank of sounds for \$99.

Another question: I'm looking for a program on a PC for up- and downloading sound banks. Another nice feature would be to be able to group sounds from different bank files into new

banks. I didn't find any program both in the public domain/shareware and in the commercial area.

Re to Robert Plotkin in TH 105: I could install an FTP site for SQ sounds, if I get sounds to store and distribute.

Thanks in advance!
Martin Urwaleck
Internet:urwaleck@ps1.iaee.tuwien.ac.at
Vienna, Austria

[CS – Again, I have to beg ignorance (I've never tried locating RAM cards in Austria). I'm not too sure Ensoniq will be jumping at the chance to tell you where to buy products that are competitive with their own, but you never know; I'll pass your letter along just in case.

There are public domain/shareware programs for uploading and downloading system exclusive data. The programs I'm familiar with treat sysex as a generic data type, so I don't know if you'll find anything specifically designed to allow you to re-arrange SQ sounds into new banks. If you don't mind foregoing that capability, then one program you might look for is something called "Geltl" (I believe). You should be able to find this in one of the user groups, or on one of the online services (such as CompuServe.)

[Ensoniq – All we can offer to help you is that those cards are 38-pin ITT/Canon memory cards. We don't know of any compatible cards, but if a card claims to be ITT/Canon compatible it should work. The cards are as expensive as they are because we are charged a high rate for them. We pass them on to our users at little to no profit because we are sensitive to their price.]

Hey TH,

Got my copy of the v2.01 OS upgrade yesterday. I haven't tried the audio tracks feature yet, gonna do that today, but I did run into something very strange yesterday.

My main work drive is a 127-MB Quantum SCSI. I boot off of this drive and loaded the OS onto it. I also use a Maxtor 213-MB drive as a backup only drive. I backup the entire 127-MB drive onto the 213-MB drive for safety until there is a Digital I/O backup solution (please!). I realize that this type of backup does nothing for fragmentation, but it is still a backup and it works. I have had to use it.

Here's the problem: I attempted a new backup with OS v2.01 and about 5 minutes into the backup it freezes every time with CREATE NEWDIRECTORY on the display. It then requires that I power off and on to reboot the ASR-10. However, if I boot up with OS v1.6 and attempt the same backup, it works perfectly fine. What's happening here? I also tried rebooting from the OS v2.01 Floppy, format the backup SCSI drive and then once again tried the backup. Same results, it freezes up again.

Is this some new obscure problem with the new OS or am I doing something wrong which seems

somewhat unlikely in this case as OS v1.6 works fine?

Regards,
Joe Santacroce
MIDILink

[Ensoniq – We have had other reports of this bug and have identified the problem. We expect to fix it in the next release. Stay tuned.]

Dear Hacker,

I sent a tape and postage to Clark to hear a demo he made on his TS-10 about two months ago. Oh, Clark, where oh where are you?

George Finizio
Wilmington, California

[CS – George, I apologize for the delay. We just finished some major remodeling, and several things had been misplaced, including your original letter. However, I sent the tape along about five weeks ago; so if you haven't received it yet, please let me know, and I'll get you another copy ASAP.]

To: Transoniq Hacker

Recently I couldn't get my ASR-10 to boot up! I believe it was "ERROR 008 REBOOT?" Anyway, after trying all my OS disks, I took the

Maybe your question has already
been answered –

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Ever hunt through that old stack of *Hackers* looking for that reference to Bernoulli drives – somewhere in the letters column? By using the Back Issue Index you can usually find the article you're looking for – but letters are different. Well, lucky you, here's your solution – electronic files of raw text from the last four years' worth of letters columns – all ready to be pattern searched for whatever you want. (DOS formatted, 720k, 3.5")

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ASR-10 in for repair... hence, my complaint begins.

I took my ASR-10 to Audio Electronics in Dallas, TX. I chose this particular shop because it was listed under Authorized Ensoniq Repair Stations on the list Ensoniq included with the ASR-10. The man behind the desk proceeded to copy my sales receipt for warranty purposes and then asked me if I wanted Priority Warranty. He said that it would cost me \$25 and that bought me the right to have my ASR-10 looked at in three days. He went on to say that if I didn't pay the \$25, he guaranteed that no one would so much as look at it for 10 days to two weeks. So even though someone might be free to inspect it sooner, they will not, as a punishment to me for not paying Audio Electronics \$25.

Everyone I've spoken to has said that it was unfair. My brother-in-law is a lawyer and he said that what they are doing is an unethical business practice. I would like to hear your comments, but especially comments from Ensoniq since they recommended this company on their list.

As you all can clearly see, Ensoniq is not to blame in any way that I know of. As to the ASR-10, all equipment from space shuttles to little red wagons need repair on occasion. I really like my ASR-10. I really don't like unethical business practices.

And what do all the error messages mean?

John Cochran
Arlington, Texas

[CS - As far as the error messages go, they have no real "meaning" that's of any use to the mortal man.]

[Ensoniq - Audio Electronics has been an Authorized Ensoniq Repair Station for almost ten years. Their service track record is very good, and their personnel are professional and genuinely concerned about their customers.]

"Rush charges" are very common in the musical instrument repair business. The purpose of a rush charge is to meet the needs of customers with rigid scheduling requirements. This special service has value and repair stations charge accordingly. However, we find it unimaginable that the service facility would actually tell you, "Even though someone might be free to inspect it sooner, they will not, as a punishment..." Perhaps you read into what they actually said a little bit? Anyway, we'd really be glad to talk to you about this further. Please call 610-647-3930 and ask for Steve Coscia.]

To: the Interface

In the September, 1992 Interface, Clark indicated that a book compiling the series of articles on the SQ instruments might be offered at some point. Where do we stand on that project?

Valhala markets a collection of "B-3" sounds for the Roland D series synths. Do you or any of your readers know of any such offering for the

SQs? I work with a beach/R&B band and could use a good collection of organ patches for my SQ2/32.

D.V.Jones
PO Box 1808
Cedar Bluff, Virginia 24609

[CS - Well, the book's on the back burner for now, while I concentrate on projects geared more toward making my mortgage payments. I will keep you posted, though, if this status changes.]

I know of no SQ cards focused specifically on organ sounds. However, Ensoniq recently announced the release of EX-4, a card containing the sound set from the KS-32. There are probably 20 or 30 organs on this card, as well as a ton of other keyboard-oriented stuff; you might want to check it out.]

Dear TH,

I have an SQ-1 keyboard which I am very happy with, but I was wondering what upgrade paths are available to me and what the costs would be. It seems most patches advertised for sale in TH are best on the extended SQs (which I do not have) even if they do work on mine. Are there third-party vendors for the upgrade hardware and are there any batches of patches for just the ordinary SQ-1?

Are there many people still with ordinary SQ-1s or have I missed the boat as far as upgrading goes?

Yours faithfully,
Rosanne McKinley
New Zealand

[TH - Unfortunately, we don't know of any third-party vendors for SQ hardware upgrades. One possible way to go is to put a little ad in our classifieds - either looking for an upgrade or selling your SQ and looking for a used PLUS. The difference between the two shouldn't be too much different than the cost of an upgrade (hopefully...)]

Dear Hacker,

Are there any SQ-80 users who would have specifics on the "anti-clack" keyboard modification for the SQ-80? I've had no success in getting any assistance from Ensoniq techs on this matter.

Thank you,
Michael Mooney
1741 Chariot Ct
Mt. Prospect, IL 60056
(708) 427-1615

[CS - I'm afraid I don't; readers?]

Dear TH,

Regarding the TS-12 OS version 2.5 GM

upgrade - I just bought my TS-12 in January 1994. Do I already have to fork over another \$99.95 for this upgrade?

Does this upgrade include ability to read/write standard MIDI files? Can't believe the TS-12 can't do this.

Finally, why isn't the details of the SysEx storage for sequences not documented?

Thanks,
Robert J LoSasso
Chicago IL

[CS - No, you don't. The GM upgrade is not so much an upgrade, in my opinion, as a "side-grade" - it will not improve the performance or change the specs of your TS-12 in any way. What it does do is allow you to use your TS-12 as a GM sound source; the TS can be configured to respond to 16 MIDI channels, and to select the correct (GM compatible) sound when it receives a program change message from an external sequencer.]

If you already have a significant library of GM-compatible sequences, or are planning on creating GM-compatible sequences for one reason or another, then adding GM capability to your TS may make sense. However, if you are not using GM sequences now, and have no real plans to use them in the future, use the money for something else.

The TS will not read or write standard MIDI files. Believe it.

The details for SysEx operation of any Ensoniq instrument are documented, and available. Write to the "MIDI Specification Desk," Ensoniq, 155 Great Valley Parkway, Malvern, PA 19355. Request information on SysEx for the TS-12, and you shall receive.]

[Ensoniq - 2) It is not that we overlooked Standard MIDI files, or don't believe in their effectiveness for sharing sequence data between devices. The plain truth is that both our sequencer design and our disk format would have had to be re-written to implement that feature. Standard MIDI Files need to be transferred on IBM compatible format disks, which is different than our format. And the sequences must support sixteen channels of information - our sequencer currently supports twelve. It was a major software job to get the TS-10/12 to "listen" to sixteen channels of incoming MIDI. Adding complete recording and editing functions for sixteen channels is a MAJOR software effort that we can't undertake for the TS series.]

We do recognize the value of SMFs and will not rule out compatibility with them in future products with disk drives.

3) We don't include MIDI SysEx documentation in every manual because it increases the size/cost of every manual, when only a small number of our customers actually want it. We distribute it for free to anyone who wants it.]

Dear Hacker,

Ensoniq samplers are my favorite since the EPS-16+. So nothing to complain about but...

I have OS 2.0 for the ASR-10. The ASR-10 is connected to a CD ROM TEXEL DM 3021 and from there it goes to an optical drive (128 M) OD 3000 TEAC and then to a Roland S750. The SCSI IDs are ASR = 3, the CD ROM = 2, the OD = 4 and the S750 = 7.

Everything went perfectly with OS 1.61. But with OS 2.0 every time I want to save, configure tracks, save the OS, or global parameters I get DISK WRITE PROTECTED, even with the physical protection off.

I know that the OD will not be fast enough to do audio on the disk. But I am afraid that I never will be able to use the new software.

So what is going wrong?

Sincerely yours,
Adriano Cominotto
Brussels, Belgium

[CS - I'm afraid I have no info to offer; Ensoniq, though, says they'll look into your problem and see what they can come up with.]

[Ensoniq - We have had other reports of this bug and have identified the problem. We expect to fix

it in the next release. Until then you could keep using O.S. version 1.61 or - stay tuned.]

Hacker,

I would like to start by saying what a wonderful resource your magazine is for Ensoniq users. I appreciate all of the tips and help you have provided me with for my ASR-10. I have a question that the folks at Ensoniq were unable to answer because they were unfamiliar with the problem I am experiencing. When using the new 2.0 digital recording OS I almost always have my RAM audio tracks playing back way too slow. I set everything up properly the way the manual explains, but to no avail. My SIMS are the correct 8 bit type and my keyboard is expanded to 10 Meg. I have a 44 meg removable hard drive (which I bought mainly for the digital recording feature) that does the same thing when using disktracks. Ensoniq techs suggested that I send my equipment in to them, which is definitely out of the question. Do you have any idea why this would be occurring? Any help would be much appreciated.

Despite my problems, I would also like to thank Ensoniq for creating a fantastic music making tool and for listening to consumers' ideas.

Thanks,
Jason Huffman
Merced, California

[CS - It sounds to me like you may be recording your audio tracks at a sampling rate of 44k and playing them back at 30k. This could happen if you're using a 44k effect while recording, and a 30k effect while playing back. It can also happen if you try to record stereo at 44k onto a SyQuest removable drive, which is not quite fast enough to do stereo at 44k.]

[Ensoniq - Our software department has been trying to reach you since we received these letters - if you have not spoken to us by the time this is printed CALL US! While Clark's answer could be a possible cause we don't know enough from your letter to help you. Getting a copy of a data file that exhibits this problem would help us to look into it. We want to help you.]

Dear fellow ASR-10 users/Ensoniq/Hackerstaff;

The most annoying thing to me I found this year yet is that my ASR-10's new 2.0 OS doesn't let the Audio tracks sync to an external sequencer.

The manual on page 16 says that this is because of inconsistent tempo in external MIDI clocks. It seems both childish and political from Ensoniq to put the blame on the outside world: the truth is probably more like that the fitted processing capabilities of the ASR are too slow or simple to handle the SCSI stress. That annoying and everlasting "Data Shuffling" should prove something. There is a saying in Holland which translates to:

Who says you have no RESONANT FILTER?

The ASR-10 and EPS-16 PLUS can now go "Bwaaoooww."

The REZ FILTER algorithm is a striking re-creation of an analog synthesizer, the classic Minimoog. A four-pole low-pass resonant filter is coupled to a lightning-fast ADSR envelope generator. The filter's resonance control (also known as emphasis, bandwidth, or Q) gives it that distinctive analog sound by creating a sharp peak in the frequency response. This peak is swept by the envelope or any modulation source. It does things you can't do by sampling an analog synth.

To demonstrate some applications of REZ FILTER, the disk comes with a collection of raw Minimoog samples that come to life when they hit the resonant filter. But what you want to do is warp your own sounds, and you can—you'll quickly be transforming your entire library of clean digital samples into fat and juicy *dweeps*, *bwops* and *darnts*.

The REZ FILTER effect algorithm also incorporates some of WAVEBOY's trademark **parallel effects**: both **chorus** and **reverb**. Other fun features include a choice of single or multi-trigger modes on the envelope generator, and a sample-and-hold.

But wait... **there's more**: this disk includes another algorithm that does *frequency modulation* (FM.) Again, an example sound is included that sounds terribly much like the DX-7. But The DX-7 used only sine waves—you can go further. This algorithm allows you to modulate any sound with any other sound! The results can

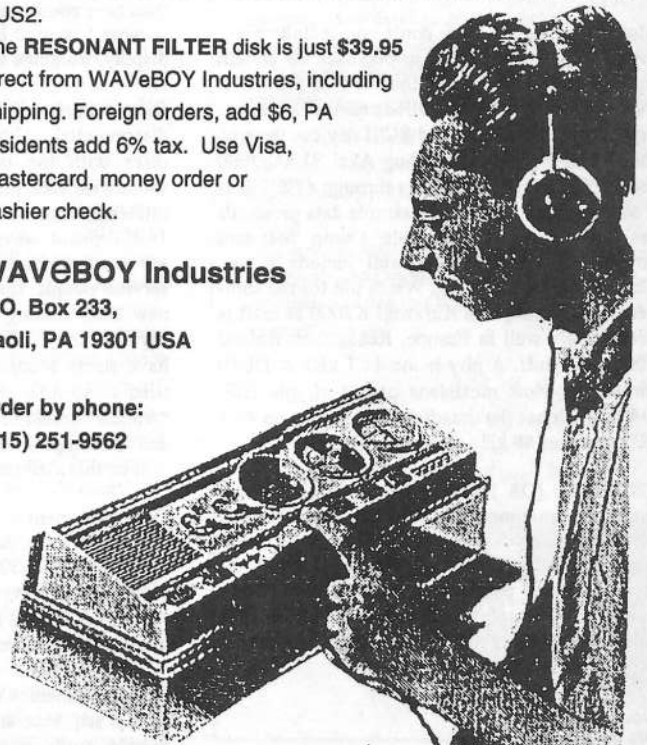
be unpredictable: really crazy, really fat, and sometimes really grungy. Like REZ FILTER, FM+FX includes chorus and reverb which can be added to the FM output or used for other sounds on BUS2.

The RESONANT FILTER disk is just \$39.95 direct from WAVEBOY Industries, including shipping. Foreign orders, add \$6, PA residents add 6% tax. Use Visa, Mastercard, money order or cashier check.

WAVEBOY Industries

P.O. Box 233,
Paoli, PA 19301 USA

order by phone:
(215) 251-9562



Buying cheap proves to be expensive after all.

For my work I use a video master sync generator which controls an Audio Kinetics synchronizer which in turn controls my Sony Umatic video and Tascam, 85 through SMPTE and then a Cubase/Atari-STe sequencer. Supposedly this is a bit of overkill on stability of MIDI clocks but an Akai S1100 slaves its hard disk recording thing perfectly through MIDI events. Even with the master-sync switched off. So does the Akai DR 4d through MTC and most drum computers through MIDI clocks.

I bought the ASR plus CD-ROM and hard disk peripherals for its musical quality of sample handling. And the then "unofficially" announced audio track possibilities seemed a real winner. I still respect the ASR-10 and its inventors very much after almost a year's use. But, alas, with the current 2.0 came the Downer of The Year: the ASR SCSI audio-track thing has to play in its own playground and doesn't interface with the rest of the world. I feel discriminated against and I'm not even black (beautiful by the way).

Suggestions for Ensoniq's R&D: When you compare the price to the little hardware fitted of the DI-10 digital interface it seems very expensive. That goes for the SCSI board for the keyboard ASR. Maybe Maartists or some other company will come up with a fairer priced DI-10 board and you lose business. Can't R&D develop an Ensoniq DI-x10 board with a co-processor of some sort to improve the syncing of the audio tracks? There seems to be enough empty space on the DI-10 to double the silicon stuff. A SMPTE (MTC?) Q-list like Akai uses is probably too much to ask of the simple LCD display of the ASR, but MIDI event triggers on maybe an extra MIDI channel in the multi-setup should come in handy, and you wouldn't need a MIDI clock. Realtime sync to MTC tops it all.

More suggestions: Why don't you include high/low note-priority settings in playback on certain instruments. Bases need this. It's in the SQ's. Please include DAT-S/PDIF-streaming of memory content as a whole and SCSI devices through the DI-10. How about reading Akai S1000/3000 format CD-ROMs/hard disks through SCSI? It is a user standard, and Akai's sample data protocols are very similar to Sample Dump Standard anyway so you might as well include it too. Through MIDI and SCSI. Watch out for the competition, Ensoniq: the Kurzweil K2000 at least is doing really well in Europe. Reads even Roland 700 series stuff. A pity is the 44.1 kHz & DI-10 limitation. Most musicians own a simple HiFi DAT which has the dreadful copy protect on 44.1 kHz and uses 48 kHz digi-ins.

USER TIP: (OS 1.61) When you trigger stereo samples sometimes the playback in externally triggered samples runs out of phase. In loops etc., I noticed a loss of high frequencies with the stereo outputs panned to mono. If you don't believe me, sample a mono-loop in stereo. The solution I found is to switch the stereo layer link off. Bug? Only in OS 1.61?

Nout Grupstra
PO Box 53303

The Hague, Holland

[Ensoniq - We really don't want to argue with you - we are not placing the blame on the outside world. The complexity of keeping the on-board sequencer and the Audio Tracks sample accurate is a big issue. You seem to have plenty of gear to cover your needs, so if you can't accept this design consideration we'll have to accept the fact that you won't use the digital audio recording features.]

We don't feel that setting your computer to external MIDI clock to interface it with the ASR-10 is such a terrible thing to have to do, but we respect your opinion.

Our DI-10 costs what it does because the digital interface chips are expensive - we have no real control over that. The SP-3 contains hi-speed opto-isolation couplers to eliminate SCSI noise, which is generally undesirable, and for hard disk recording totally unacceptable. Removing them would reduce the price, but destroy the acceptable functionality of the interface.

The DI-10 does support input sampling from a 48 kHz source!

Stereo sample lock was fixed in OS version 2.

Thanks for all your other comments - we can't address each one in this limited space.]

Dear Transforming Hackers,

My letter is regarding the TS-12. First of all, thanks for your mag and the help it's been for me since SQ-80 days. After the 80, I bought the KS-32 because I wanted the 76-key weighted keyboard and the great piano sounds. But the small display was the downside of the KS. But then here comes the TS-12; I thought, "YES, this is what I wanted in the first place: 76 keys, big display, weighted keyboard, nice piano sound...."

Disappointment #1: BUT after purchasing it I am disappointed. Although the operation is much nicer with the big display, it is not at all soundwise like the KS-32. The piano sound is different, with a different waveform than the KS 16BIT piano wave. And the STRING sections are really bummers. Even Ensoniq customer service people agree with me. There are some new disks coming out with new sounds and they say that the SLT sample series is supposed to have string sounds that are really good. I have tried some ASR strings and they have the same "wobble" sound to them. As far as the new disks and the samples, I seriously doubt that the strings will be that different.

Disappointment #2: The TS is supposed to have a better effects processor, but it has the same noise as the KS-32. It is very hissy and even has "afterglow" of even "talk" type sounds and buzzes which are not romantic to say the least. Has anyone else out there experienced this "effect"?

Disappointment #3: When I add or delete bars from a sequence and then try to "go to" and edit, I hear notes sounding from instruments that

aren't even on; also I hear notes playing "out of time" from the other ones. If I play the sequence from the start it does not happen. Ensoniq, please FIX this, okay?

Disappointment #4: I understand that in sequence mode only one effect controls all the tracks. Is this true or does each track keep its own effect and they all get sent out. If it is true, what's the point of having different effects. I certainly would want my drum effects to be utilized, but not have them be applied to my piano sound. A flanged, distorted, gated piano????? I don't think so Tim. If this is all completely misunderstood, please excuse my newly found ignorance.

So I'm crying HELP please. Can anybody out there program some string sections that sound like the KS-32 DYNAMIC STRINGS patch? Another sound I'd like to see duplicated is the ENCORE electric piano patch of the KS-32. Also the KS-32 DRY GRAND and the MELLOW TENOR(sax). I'm willing to trade some of my "tweaked" sounds for these or even to PAY for them. Also, if you have some samples that are under 2 meg that may be what I'm looking for please let me know.

Can anybody out there handle this challenge???

If you are a KS-32 owner and are thinking about going to the TS-12, play on it a lot before you decide. Also, you absolutely MUST get Giebler Enterprise's programs for the KS-32. I wish I had gotten them sooner. They are very quick and very helpful in storing and managing files - sequencer and sounds. It enabled me to dump the expanded, full memory in my IBM in a flea's sneeze. Great!

L A Spencer,
French Camp, MS 39745
(601) 547-6365

[CS - 1) The piano waves in the TS are derived from the same source as the 16-bit waves in the KS-32; the difference you hear is due to different programming and effects parameters. It shouldn't be too hard to take the closest piano sound in the TS-12 and edit it to be more like your favorite piano from the KS-32 (perhaps someone at your local dealer's can help you at if you're not too comfortable with programming). And don't give up on the strings - there are an awful lot of string sounds in the ASR library; I should think you'll be able to find something you like.

2) The TS-12 effects processor is much quieter than that found in the KS-32. If you are experiencing a similar amount of noise, I'd have to conclude that there's something wrong. You might want to get in touch with Ensoniq Customer Service (215-647-3930) and see what they have to say.

3) I've never experienced the problem you describe on my TS-10; you might want to run this one by Ensoniq Customer Service as well.

4) While it is true that you can use only one effects algorithm at a time, you can get multiple effects out of the TS by selecting an algorithm that

includes more than one effect. For example, using the Chorus+Reverb+DDL algorithm, you can set up a sequence in which a trumpet has echo (DDL), a guitar has chorusing, and a piano has reverb.]

[Ensoniq - 1] We're surprised by your reaction to the string and piano sounds in the TS-12, as they use the same wave data as the KS-32, with the addition of a few more multi-samples. Because of this fact, we expect that trying new programs should help you to find sounds that you like better. Your statement that, "Even Ensoniq Customer Service 'people' agree with you" about the strings can't be right. Our Customer Service Reps acknowledge that not everyone will agree on what a good sound is, but the entire department believes that the TS-12 strings are superior, mostly because they're more flexible in their programming and expressive possibilities than the KS-32 allows. But the main point is that you don't like them, and we hope some of our after-market libraries will satisfy your tastes.

2) The TS-12 uses the same effects chip as the KS-32, but runs at a higher speed with many more instructions per algorithm, hence the definite higher quality and more versatile effects algorithms.

3) We'll have to look into this one.

4) The TS-12 does use a global effect for all tracks in a sequence. But we have designed it to give you a lot of flexibility in applying effects to different tracks. The three effects busses offer you choices of where to route each track in an algorithm, you should study up on that in your manual. And we developed a whole series of parallel effects specifically to address your scenario, giving you three different effects in a single algorithm for maximum mixing flexibility (yes, I do write spec sheet and ad copy!).

Given a little bit of time, we're confident that you will master these ideas and be making great music without "flanged, distorted, gated pianos." Unless you really like that sort of sound...]

Dear Hacker

I enclose my subscription renewal and just want to thank you for producing such an interesting and helpful product.

I own an EPS-16+ Rack (and SD-1) and am considering a SCSI interface upgrade. I also own a 386 DX40 PC and would like to purchase a 128-MB removable cartridge drive and CD ROM drive which I could use for both machines. The removable drive I have in mind is the Fujitsu M2511A 128-MB Optical. I know that the recommended drives for CD ROM are those from Sony and Toshiba but these tend to be the more expensive ones. NEC have recently introduced triple speed drives. Will these be suitable alternatives and will they give any advantages? Also are Ensoniq's CD Roms in the future only likely to be suitable for the ASR-10 memory size or are they worthwhile for EPS-16+ users also?

Hope that you or Ensoniq can help on the compatibility questions.

With many thanks, yours sincerely,

Marcel Grech-Marguerat
34 Poplar Avenue
Bedford Beds MK41 8BL
England

[CS - So far, the results of testing NEC CD-ROM drives with Ensoniq products have not been encouraging. The newer triple speed drives have not been checked yet, but I'd proceed with a great deal of caution, if I were you. Also, there are some fairly tricky issues involved in using the smaller optical drives with Ensoniq products - you'd be well advised to try before you buy, particularly with any storage device that does not appear on Ensoniq's approved drives list.]

[Ensoniq - NEC CD-ROMs don't work on the ASR-10 and probably don't on the EPS-16 PLUS either. We don't have a Fujitsu optical so we can't comment on that one.

In our sound development we try to take into consideration different users with different memory size needs. Both CDR-1 and 2 work with the 2 MB memory of your unit, and we intend to support both large memory sounds (6-16 MB) and smaller memory versions (under 4MB) in future releases, for sequencing needs and the memory limits of the TS series, which can only load sampled sounds that are 4MB or smaller. Wherever possible we will keep the memory size down, but we cannot promise to hold all releases to a 2MB limit. We are also redesigning our AS series packaging to better reflect memory sizes and their compatibility with various Ensoniq products.]

Dear TH,

Forget about oscillators and envelopes for a minute, and let's clear up some important issues that have been nagging at me for some time now.

First of all, I'm sorry, but I just can't buy your response to Kirk Slinkard's letter (March '94 Interface) in which you tried to explain the meaning of "Transoniq" as having to do with "all" ("trans-") "Ensoniq" gear. We all know intuitively (and so do our spouses) that sitting in front of an Ensoniq keyboard induces an immediate trance. This trance comes from the blue-green light of the display, and cannot be broken except by (1) threat of divorce, or (2) an all-notes-off message, which you will notice Ensoniq has conveniently left out of all its products. Therefore I submit to you that the "Trans-" of "Transoniq" comes, appropriately, from the word "trance."

Secondly, I must take issue with your choice of the word "bevy" to describe your writers (back cover), and, more recently, your advertisers (p. 3, Issue #105). According to Webster's, "bevy" is defined as (1) a drinking bout, (2) a group, especially of girls or women, and (3) a flock, chiefly of quails. This last definition is supported by that scholarly work, *The Venereal Game*, which details the history of terms given to groups of

animals, as in, for example, "a murder of crows" (popularized by Sting on *The Soul Cages*). Although I have never been included in your "bevy" of writers (one has to wonder what one must do to join this elite listing!), if I were, I would protest being identified as a drunken brawl, a female, or a quail. I can make some sense out of the first two, but not the last.

Thirdly, a question: For years now I have patiently observed the first section of your "Front Panel" identified as "RND" followed by three eighth notes in parentheses. I have no doubt that "RND" stands for Research aNd Development, but what in the heck are those three notes? And why are they parenthesized? It's time you came out of the closet and let the rest of us in on this insider's mystery.

Lastly, and most seriously, I must inform you that you've been caught. Oh, sure, deny it if you will - but I have incontestable proof that you are engaging in subliminal advertising for Tom Shear! *The Hacker* has woven a tapestry of typos, anagrams and numerological sequences throughout its March '94 issue, designed to keep the name "Shear" in front of our eyes!

Exhibit A: In TH's response to C. Peglor's letter (p. 23), we read: "...because of the shear (sic) size of this series..." (emphasis mine). An obviously deliberate typo!

Exhibit B: On page 4, Daniel Mandel writes,

ETHEREAL POP PRIMARY SCHOOL

announces


the release of ETHEREAL BASE disk organizer for dos computers. A new data base program that lets you catalog all your disks and be able to look up any sound and its location. This is a great way to keep track of all your disks!

Our complete library of 50 disks is available for \$149. This contains over 200 sampled synths. Mini Moog, Arp 2600, Xpander, D50 & Jd 800 just to name a few.

When ordering sounds, let us know if you have a dos computer, and we will send you a catalog of our sounds on a disk that helps you find the type of sounds you want!

Order disks in sets of 10	\$49
Order the entire library	\$149
ETHEREALBASE disk organizer	\$49
Library & ETHEREALBASE pkg	\$179

write the schoolmaster at
ETHEREAL POP PRIMARY SCHOOL
po box 781266 houston, texas 77270
telephone # 713 768 4556



"...you can here (sic) the jazz..." (emphasis mine). This glaring typo forces the reader to mentally correct the spelling to "hear," which is, of course, eighty percent of Tom Shear's last name. Very tricky!

Exhibit C: On page 11, Barry Carson's fifth paragraph has five different words beginning with (respectively) s, h, e, a, and r. And we all know what that spells.

Exhibit D: If you convert the letters of "Shear" to their numerological equivalents, you get 14, 8, 5, 1 and 13. If you do the same thing with the numbers on the telephone keypad, you get 7, 4, 3, and (this is tricky!) 27. Here's my point: the *Transoniq Hacker*, Issue #105, has page numbers corresponding each of these letters! And you thought you could fool us.

Exhibit E: The word "share" is in the Hacker-patch ditty on page 19. This is an obvious anagram of "Shear."

Exhibit F: You have no shame! The very title of this esteemed magazine contains all of the letters of the ubiquitous name of SHEAR.

P.S. Just because you're paranoid doesn't mean they're not out to get you.

I rest my case.
Steve Vincent
Tacoma, Washington

Treat Yourself!!

ASR-10/TS-10/EPS

Samples from K. Thomas

Electronic Musician says —
"Sound Quality: 5 out of 5
Value: 5 out of 5"
[EM, Jan. '92]

Keyboard Magazine says —
"Beautifully recorded... incredibly smooth... rich... soulful... crisp and seamlessly multi-sampled."
[Jim Aikin, *Keyboard*, Oct. '91]

Free Catalog
Demo Tape ... \$8

K. Thomas

PO Box 23056
Stratford, ONT N5A-7V8
Canada
Phone: 519-271-7964
or 519-273-7812

[TH — Well, when you're right, you're right. And just when we were about to add you to the bevy. Shucks. (RND = Random Notes.)]

Dear TH:

You have a great news magazine. I really enjoy reading the *Interface* and many of the articles and reviews, and of course, all of the other good stuff. Have a couple of questions:

1. Can you recommend any literature on sound programming that explains and illustrates each aspect of the process? After taking apart several programs with unusual features I am still unable to understand some of the creative ways in which envelopes, etc., are being used to modulate waveforms.

2. Could someone explain what it means for Ensoniq to add General MIDI to the TS Series as announced in TH #105? Is this an entirely new feature or an expansion of an already existing one? I was under the impression that it was already possible to playback sequences generated by computers via MIDI. So, how does my SD-1 stand in this regard?

3. Can the SD-1 be upgraded with digital outs?

4. Did I read recently that the TS-10 can convert SD-1 sequences to the TS-10 format?

5. Does Ensoniq plan on releasing any new sound program disks for the SD-1?

6. Will the next O.S. upgrade for the SD-1 support tempo changes within a sequence? (Doesn't the TS-10 have this feature?) While it may be tedious, would it be possible at this time to create tempo changes on the event list page?

7. I'd like to join Becky Dierkson (TH #94, p.30) and Sylvain Lamy (TH #100, p. 30) in asking Ensoniq to consider including in the next O.S. upgrade the ability to have both cartridge programs and their associated tracks to default to internal RAM. I, too, listen to the seq/song playing while searching for and auditioning programs (I can't imagine doing it any other way!) and end up with the same problem concerning saving and reloading data in a simple and timely manner. Eliminating this dilemma would make the incredible SD-1 even more delightful!

8. In Jeffrey Fisher's article, VFX-sd/SD-1 Tips (TH #77), the 10th tip concerns Master Keyboard functions. Any chance Mr. Fisher would like to go into greater detail on this subject in another much appreciated article for the much appreciated *Transoniq Hacker*?

Thanks a bunch,
Robert Johnson
Mesquite, TX

[CS — 1] Nothing springs to mind, but you might try *Mix Bookshelf* (6400 Hollis St., Suite 12, Emeryville, CA 94608); it's usually a good source for technical books relating to music and audio).

2) General MIDI is a specification that states (among other things) which sounds should be located where in terms of a GM instrument's program list. The idea is that sequences created which adhere to the GM spec can be played back with little or no editing on any GM instrument, regardless of manufacturer or model.

The TS-10 (and every other Ensoniq instrument, for that matter) is quite capable of playing back sequences generated by a computer (or other external sequencer). The only difference is that when playing back GM sequences, you'll have to edit the program changes messages sent by the external sequencer so that the correct sounds will be selected and played.

3 & 4) No.

5) I don't think so.

6) As far as I know, there will be no more OS upgrades for the SD-1. The SD-1, as a product, is (as they say) "mature." You may, however, want to check out Watt Products' TC-100 Tempo Controller (reviewed, I believe, in TH #104, March '94). It's an add-on hardware product designed to add programmable tempo changes to VFX-SD and SD-1 series instruments (\$69.95 from Watt Products, PO Box 584, Bordentown, NJ, 08505.)

[Jeffrey Fisher responds — Yer wish is my command, Robert. If the editor of this fine publication will grant me a scant page or two, I'll give it my best shot. Well?]

[TH — Go for it.]

[Ensoniq — 4] What you probably read is that Giebler Enterprises has a software package for the PC that will convert SD-1 sequences to TS format. A nifty utility that we're pleased he developed.

5) We have no new libraries in the works, but there are plenty of third party companies who support it. Check out the ads here in the *Hacker*.]

Dear Hacker,

Last August I bought a KS-32, and since then I've learned how much I still have to learn about the world of electronic keyboards. (Does anybody really know how to use everything on that instrument?)

I bought an Alesis Data Disk to save my files, which seemed like a good idea at the time, considering that memory cards seem pretty expensive for their capacity. However I now realize that I may have sacrificed a few things.

First, although it saves sequences fine on the "RECV MULT SYSEX" screen, "RECV ONE SYSEX" screen only works for saving single sounds. The "RECV MIDI SEQ" screen only saves if I play a RAM or ROM sound, not from a song/preset. However, when the Data Disk plays back the MIDI sequence, it will work through a preset with multiple tracks lit. So I guess it does

the minimum of what I hoped it would.

Unfortunately the Data Disk does not seem able to do a couple things that I hoped it would. It won't receive and store multiple files when I try to unload the KS-32's entire sequencer worth of files. The KS-32 also will not receive multiple files, even though the Data Disk has a command that says "Send All Files." Is there some little trick I'm not doing? It would sure be nice to load a bunch of sequences and presets all at once, especially when I play in public. It would also be nice to load my own suped up RAM sounds a whole bank at a time. So far, I haven't figured that out. The people I've talked to through customer service at both Alesis and Ensoniq weren't much help.

By the way, has anybody else had the experience of crashing the keyboard the first time they used the Data Disk? I'm sure glad the KS-32 was still under warranty or I would have been out \$600 for the cost of a new board for the keyboard. For some reason the keyboard was unable to receive any MIDI data.

I also have a few other questions and suggestions.

Why doesn't Ensoniq sell keyboard cases or stands? Why doesn't the KS-32 come with a music rack? Why is the KS-32 designated as "MIDI Studio" as opposed to a "Performance/Composition" keyboard?

Can I buy specifications only for single sounds listed on your cards instead of buying a whole bunch I don't need?

If I ever move up to the TS-12, will there be any way I can transfer all my files to its alien voice architecture?

Does anybody make a workbook to help us new hackers on the block learn how to design our own sounds on the KS-32?

I'm also curious what Ensoniq may upgrade on the KS-32? Or even what could be upgraded.

What are the legalities involved if I would want to market my arrangements for the KS-32?

In spite of my questions, I'm in awe of the technology you guys produce. I wish I had more time in my day.

Yours,
Dan A. Rohde
2505 Forest Parkway
Muscatine, IA 52761

[CS - If I'm not mistaken, there are a SysEx message to the KS should consist of two parts. The first is a handshake, and the second is the actual data. The KS will require a pause of about 200ms between the two, to give it time to respond to the first message. The problem you're experiencing could be because the Data Disk is not pausing between messages, which won't give the KS sufficient time to prepare for the dump.]

I believe that the Data Disk software (at least in its most recent version) is configurable to allow you to insert the appropriate pause at the appropriate time. You might want to check with Alesis to confirm this.

I'm going to have to defer to Ensoniq on most of your other questions, but I can tell you that it's perfectly legal to market your own compositions on the KS-32. I'd be careful about marketing arrangements of other artists copyrighted material, though. You could expose yourself to charges of copyright infringement. If you really want to market your arrangements of other's material, it is possible to secure licensing to do so. This, of course, will involve paying some combination of fee and/or royalty to the owner of the work, and perhaps to other entities, as well. I'd recommend enlisting the services of a qualified music attorney should you decide to proceed down this path.]

[Ensoniq - We are a relatively small company and we haven't seen the need to branch out into cases and stands, which are readily available from a number of fine companies. We like the idea that various companies in the music industry can work together and support each other's products.]

The KS-32 actually uses an older case design (from the SDP-1), which didn't support incorporating a music rack. We are currently working on a design for the TS-12, which should be available in a few months.

Because we thought up Weighted Action MIDI Studio before Performance/Composition Synthesizer? Just kidding, we simply have given each new product its own descriptor, and each one tries to best describe our intended position for that product. One of the most important features of the KS-32 is its weighted action, while the TS-10 is more of a complete "workstation," without the weighted action. The TS-12 is so similar to the TS-10 that we didn't feel the need to change the descriptor to reflect the different keyboard action.

The KS-32 and TS-12 cannot transfer program or sound files in any way. An opportunity for any enterprising hackers?

We have no plans for upgrades to the KS-32.

You are free to market your arrangements for the KS-32 as far as Ensoniq is concerned, but pay attention to the points that Clark makes regarding copyrights and such.]

Dear Hacker:

I'm ready to buy a microscope to keep on reading all the magnificent and entertaining information you all share with each other, it's worth the effort.

1) If you can't spend valuable space in this point please pass it to Ensoniq, this is something I need them to know. A month after updating the ROM of my ASR-10 to version 1.5, and feeling a little disappointed getting only the Enter Plays Key

function for all that hassle of getting the keyboard to the Ensoniq dealer and paying \$27 to have my ASR-10 up to date made me feel like a little snob. But now that I have received for free the new Version 2.01 OS software I couldn't resist expressing all the admiration that a company deserves for providing their users with upgrades that not only fix bugs but convert their machines into more desirable ones as time passes by and technology tends to make everything bought before "OLD" stuff. Have you hackers noticed the incredibly wonderful sound that now comes out of the same "OLD" ASR-10 Ver. 1.06...? My god! I really wasn't dreaming with a better sound, 'cause I knew the sound was the best, but having this kind of 44 kHz effects brings a new dimension in power processing that makes me forget the reduction to 23 voices of polyphony. And talking about programmability, oh guys! What are you trying to do? What a lot of parameters and even Expert parameters, now I'm just starting to realize what kind of things you can do with your ESP chip. Now I wish I could change all the 50 ROM effect locations for 20 of 44 kHz. I was hoping to have the possibility of using EQ for sampling, but at 30 kHz it used to be worst. About the new Digital recording capabilities I can say nothing, I haven't used it at all because I keep on saving my hard earned money for the day I can record in an Alesis ADAT.

2) Thank you very much, Garth Hjelte, for thinking about us "button surfers." It will be a dream



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to use your software – Windows-based I hope. So now I must ask you – how do I get it? I'm ready to send you a money order but what about the shipping costs?

3) Regarding what Brian Reardon says in his letter (#105), there is a much easier way to automate the loading of instruments in your ASR-10 from a SCSI drive or floppy: with MIDI PROG CHANGE=ON and in MIDI IN MODE =MULTI or MONO B: send from the computer sequencer MIDI program changes 101 – 128 to invoke Macros 0-27 (change directory) – or 1 to exit to the previous directory – and send a program change equal to the bank file number in your drive to load complete banks into your ASR-10. The ASR-10 manual says that this must be the file number +1 but I found that it must be the same number.

4) Now that I finally have at hand the External Command Specification (MIDI implementation manual) of the ASR-10 (Rev. June 23, 1993), I have tried to automate with Virtual Button Press commands and even with PUT PARAMETER messages the selection/deselection and mix/pan adjustments of the audio tracks, and it seems to me that this just doesn't work at all, though I have been able to set the same adjustments for instruments in both ways easily.

I have sent Hex: FO OF 03 00 11 00 00 00 00 00 00 01 00 00 01 2D F7 to change mix of an audio track but...nothing happens...there seems to be an error because in the manual Sequence track parameter Song Goto Step SysEx high byte is 00 and lo byte 01 – the same goes to Audio Track mix parameter 00 – 01 respectively. Can anyone help?

5) How do I get the OS version of the SQ-2/32 with button presses?

6) When after several intents I finally sampled my old/useless/out-of-tune/monophonic/37-keys Kawai 100-F analog synthesizer I could not believe the amazing power of the ASR-10. Have I mentioned it? I love it! It took me several hours of hard work but I love the sounds I have gotten.

Thanks a lot for your outstanding magazine, and to all the hackers who make the Interface the heart of it with your invaluable information.

Yours sincerely...
Angelo Zucco M.
Estado # 273
Santiago Chile

[Ensoniq – 4) We'll have to look into this and get back to you. Please be patient.]

Dear Hackers,

To the point... I have two hard drive/tech support problems which I would like to share with my fellow hackers in the desperate hope of finding a solution while venting some 14 months of frustration.

I am a self-employed musician who supplements my income by freelancing as a MIDI sequence

programmer and consultant. While I am currently revamping my MIDI studio around an IBM clone I still rely heavily on my original EPS and, until recently, I was a loyal and patient EPS user but I feel that the time has come for me to, once again, climb atop my soapbox.

My first problem started over a year ago (around January 1993) when I decided to upgrade my Ensoniq 4X expander to a 4X with SCSI.

The music store I formerly frequented sold me a SCSI retrofit that they promised was 100% compatible and which their tech person installed. While I didn't have hard drive at the time, I have a client in Burlington, VT with an 80 meg Eltekon drive (and an original EPS purchased about the same time as my own). We couldn't be happier with the drive which, after four years of smoky bars (and his dropping it 3, count 'em, 3 times), has performed flawlessly. Anyway, we can load the largest bank of 8 instruments into his EPS in about 9 seconds. When we hook it up to MY machine the same bank takes about 30 seconds to load.

I called the store to discover they had installed a PS Systems SCSI into my Ensoniq 4X expander. I called Ensoniq who said that *that* was the problem – I called the store who called PS Systems who told the store that Ensoniq was wrong and you COULD mix the two brands. Well after weeks of calls to Ensoniq, PS Systems, Garth Hjelte at Rubber Chicken (who was genuinely concerned and helpful) and the store (in Clifton Park, NY), the store agreed to install an Ensoniq SCSI into my Ensoniq 4X expander (and all I had to do was pay the difference in the cost of the two SCSI retrofits as well as two-and-a-half of the three different in-house technician bills).

...SAME PROBLEM...back to the drawing board...

"Check the RAM and ROM versions" – not the problem...

"They should have installed the 'new chip set' when they installed the SCSI retrofit" – there is no chip set version newer than the one in my machine...

I have had several conversations with: the store – "there's nothing more we can do..."; Ramtek (who took over Eltekon) who has never heard of this problem and Ensoniq, whose tech people started out being helpful but about 6-8 months ago stopped returning my calls after a tech support person told me that he would talk to the engineers and call me back. Maybe I'll have a video phone by the time I hear from him...

At any rate, the problem was never fixed and no one seems interested in trying to solve it – only in selling us new gear. I still love my EPS even though hard disk access is only barely faster than a floppy.

This one will be short... That same Eltekon drive which has been working so well has begun acting up in the last few months. We tried to buy another drive from Ramtek but their "tested and approved" drive wouldn't work with either of our

machines. After going through the RAM and ROM thing again, we were told that certain Quantum drives were too fast to work with the original EPS but the Syquest drives would work. We tried that with no luck and were told that while the 88-meg removable wouldn't work the 44 meg would. It doesn't, so we decided to try to clean up the Eltekon. I believe the problems to be primarily the result of disk fragmentation. I was told that if I was to backup the drive onto floppies and then restore it this could solve the problem. But alas, the Backup/Restore command doesn't work (thank you Ensoniq for the 2.S O.S. – Feb. '94 *Hacker*, from Ensoniq, "We are not currently working on or planning any further revisions to the original EPS Operating System.") Planned obsolescence?

Well, my client spent weeks manually copying everything to floppies and writing down bank and macro info and today decided to take the last act of a desperate man (or was it the first act of Macbeth) and reformatted the drive. After copying the O. S. onto the drive and setting up the directories as per the directions, he began reloading the instruments only to discover that that large bank of instruments that we used for our bench tests now takes about 30 seconds to load on HIS previously fast machine.

Somebody help us please!!!

Let me just add that while I am an insignificant nobody in upstate New York, no less than six of my total client base use the original EPS. My client mentioned throughout this letter was planning to upgrade to the TS-12 but the lack of support we have received (with the notable exception of Garth – thank you again) has really forced us to examine other options.

My apologies for my negativity and long-windedness and special kudos to the *Hacker* for providing this forum and proving, at least to *Hacker* readers, that there is more to Portland than the Trailblazers and Skate-Gate. By the way, are there any original EPS users left out there? You can't all be upgrading because so few of us are getting rich. So if you are there, let the *Hacker* know or better still drop me a line and maybe we can compare notes.

A Million Thank You's
Daryl Jeffords
MIDI-Evil Music
RR#3 Box 3404
Lake George, NY 12845

[CS – This one's a real head-scratcher. I've passed this info along to Ensoniq – maybe they can shed some light.]

[Ensoniq – On April 15th we contacted Mr. Jeffords to offer some suggestions that might resolve this situation. He is going to get back to us with the qualification results. When he does, we'll know more about what to do.]

What we can say for now is that it is very difficult to trouble-shoot SCSI issues and we apologize for the problems you have experienced.]

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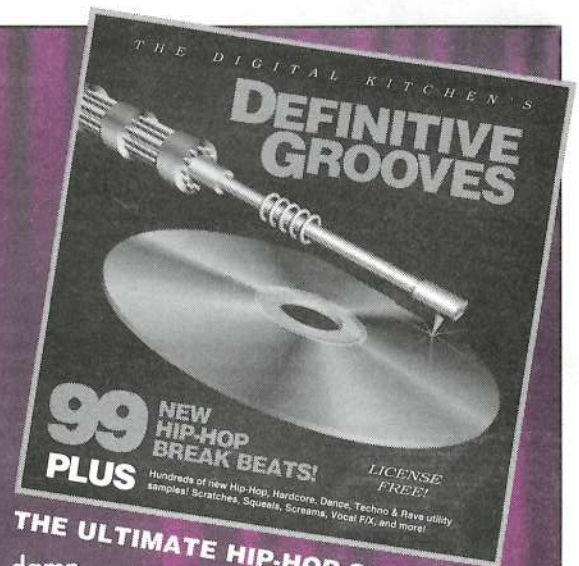
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