First Steps in the SEQUENCE

HOW TO GET STARTED IN MAC MIDI MUSIC WITHOUT REALLY TRYING

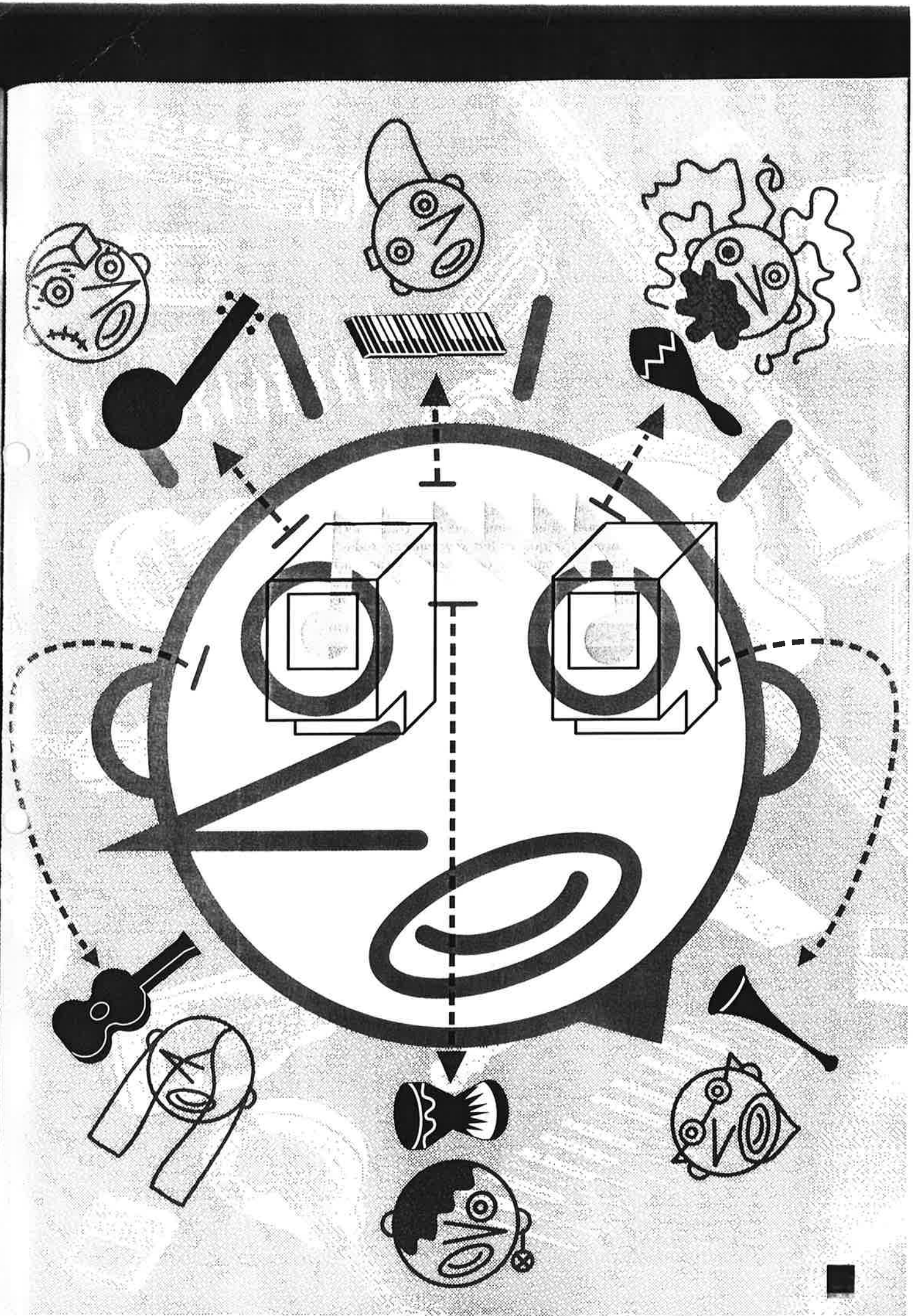
"Ka-boom TEE radda-radda-ra! And then the brass: *ump-POW! Bop-sha POW!* And then—drum break! *Diddle-iddle-iddle BOP!"*

Morty was mortified. This was his Big Break—his chance to sing his hit-song-to-be for a real record producer, Lefty C. Dee. But Lefty wasn't getting it. He gave Morty a stare blanker than a new sheet of music paper. "Sorry, son," he said. "Your work doesn't fit our needs at this time." Lefty left.

That did it. Morty was tired of expressing the music inside him by trying to sing all the parts at once. He'd seen Macs in recording studios; he'd heard that movie scores, TV jingles, and hit singles were all somehow made on the Mac; and he'd heard fantastic, full-orchestra demo tapes made by friends who swore they'd never left their living rooms. Hey, I've got a Mac, Morty thought—why can't I do that?

by David Pogue

JOHN HERSEY



The salesperson at the music store he visited was delighted. "Why, we've got just what you need! We'll set you up with a SMPTE-to-MTC converter, maybe some DSP modules and a 16-bit additive-waveform tone bank—you'll be cookin'!" Morty wondered what any of the salesperson's pitch had to do with music, smiled wanly, and went home. If he was going to learn how the Mac could make music, he'd have to start from the beginning.

Ingredients

What Morty was soon to find out was that high-quality music-making on the Mac isn't really difficult at all. The world of music he was about to enter is known as *MIDI* (pronounced *middy*). It stands for Musical Instrument Digital Interface—computerese for synthesizer hookup. MIDI is something like PostScript, the printer language spoken by the Mac over a cable. But instead of carrying page-description instructions to a printer, MIDI cables convey music-description signals to a synthesizer. One signal says "play middle C"; another says "push the sustain pedal down." The keys and pedals don't actually move, but otherwise the instrument responds by playing exactly as though a human were at the controls.

And because the Mac transmits hundreds of these MIDI signals per second, it can play some very complex music indeed. It can, for example, play the synthesizer's string, woodwind, brass, and percussion sounds simultaneously. Using a technique called *sequencing*, today's composer or orchestrator can teach the Mac each instrument's part separately; then, like a multitrack tape recorder, the Mac plays all the parts back in perfect synchronization.

Unlike a tape recorder, however, the Mac-as-a-sequencer can change the key of a piece instantly without changing the tempo—or vice versa. And the Mac never makes you wait to rewind or fast-forward; you can jump instantly to any spot in the piece. Above all, composing with a sequencer means you can fix wrong notes, add accents or crescendos, and copy and paste parts of a song—all without ever having to rerecord the original performance.

After making a couple of phone calls, Morty realized that he could get started in MIDI, with no previous experience, for under $500. All he needed were the three ingredients of a Macintosh music setup: a synthesizer, a MIDI interface to connect the synthesizer to the Mac, and a sequencing program.

The Keyboard

Suppose you're writing a piece for bass, piano, and flute. Already your piece is too difficult to play by yourself—even if your synthesizer can produce those sounds, you'd need at least three hands. Here's where MIDI comes in handy; the Mac can play all three parts, keeping perfect track of which instrument is supposed to play which notes.

That's most of what you need to know when you sally forth to buy a synthesizer: it must be *MIDI-compatible* and *multitimbral* (can play more than one instrument sound at once). You can tell if a keyboard is MIDI-compatible by checking for the presence of two round, nickel-size MIDI jacks in the back. You can't really tell if the synthesizer is multitimbral by looking; get a salesperson to tell you. The most basic multitimbral MIDI keyboards cost about $150 in music stores; Casio, Yamaha, and Kawai each make several keyboards with street prices in that range.

Of course, what you get for $150 won't sound like the Vienna Philharmonic. These keyboards sound pretty cheap and chirpy. Furthermore, they have miniature plastic keys, about two-thirds the length of real piano keys. And they don't have 88 keys like a piano, either; you usually get four

SEQUENCING PROGRAMS

Product Name	EZ Vision 1.0	Trax 2.0	One-Step 1.0	Deluxe-Recorder 1.0
Company	Opcode Systems	Passport Designs	Freq Sound	Electronic Arts
Price	$149	$99.95	$69	$149.95
Maximum number of MIDI channels	16	32 *	16	32 *
Maximum number of tracks	16	64	16	16
Import and export MIDI files	●	●	●	●
MIDI Manager–compatible	●	●	○	○
Manual offers tutorial/manual offers index	●/●	●/○	●/○	●/●
Online help	●	○	○	○
Adjustable countoff click	●	●	○	●
Auto stop/auto rewind	●/○	●/●	○/○	●/●
Gradual tempo changes/graphic tempo editing	●/●	●/○	●/●	●/●
Looping of whole track/looping of part of track	●/○	●/○	●/○	●/●
Metronome via Mac speaker/metronome via MIDI	●/●	●/●	○/●	○/●
Notes displayed in color	●	○	●	○
On-screen volume sliders/recordable movements	●/●	●/○	○/○	○/○
Out-of-tempo recording (add barlines after)	○	○	○	●
Play, stop, rewind from Mac keyboard	P, S	P, S, R	P, S, R	P, S, R
Select synthesizer sound by name	●	●	○	●
Step recording (one note at a time)	●	●	●	●
Number of steps required to insert copied material	1	3	2	3
Tab stops demarcate song sections	○	●	○	○
Track names visible while working	○	●	○	●
View and edit several tracks at once	●	● [4]	●	○
Visual editing of controller info	●	○	●	●

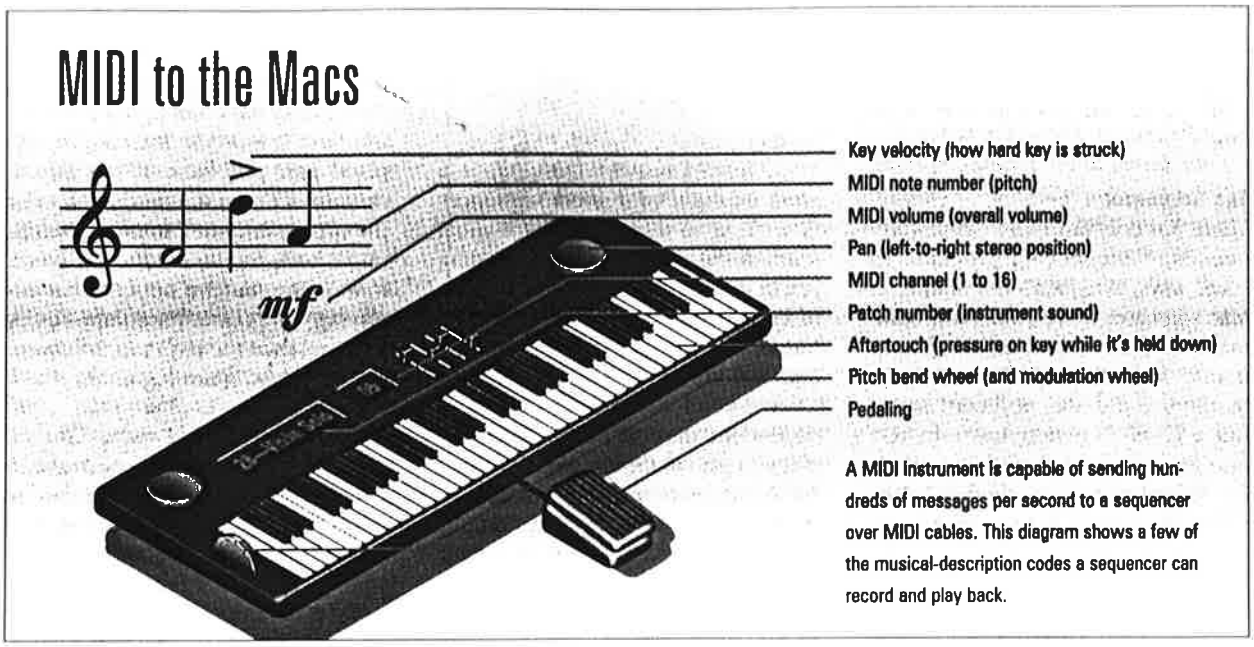
● = yes; ○ = no.

* To get 32 channels you need two MIDI interfaces (one for the modem port and one for the printer port) or a MIDI interface designed to plug into modem and printer ports simultaneously.

[1] Infinite looping only.

[2] Except Mac Classic.

[4] Cut, copy, and paste only in Song Editor, not in Step Editor.



or five octaves instead of seven. Therefore, you may want to consider a keyboard with full-size keys or another octave's worth of them; count on paying another $100 more for each of these features. If you're going to get a little more serious, and want to create more professional-sounding recordings, you might consider paying several hundred dollars more for *touch-sensitive* keys, so that the harder you strike a key, the louder the note sounds (as on a real piano).

Finally, find out how many notes the synthesizer can produce simultaneously. A *12-note polyphonic* keyboard, for example, can just handle an arrangement for bass, drums, piano, and strings, provided no more than 12 notes are sounding at any one moment.

Morty ended up selecting the Yamaha PSS-795 for about $300. It has smallish keys and it's not touch sensitive, but it is 28-note polyphonic and it has built-in stereo speakers, excellent drum sounds, and strong MIDI features.

The Interface

Trudging home with his new synthesizer, Morty looked forward to the simplicity of the next item: a MIDI interface. A MIDI interface is the communications link between the Mac and a MIDI keyboard; the interface needs no power cord, no on/off switch, no glowing lamps. You plug one end in the modem port of the Macintosh; the other end attaches to the MIDI cables from the synthesizer. There are two cables, labeled IN and OUT, because MIDI signals only run one way in each cable.

The Apple MIDI Interface is the simplest. For $99, you get a Mac-color plastic box about the size of a bar of Ivory soap. It works just fine, but it's a poor value for two reasons. First, it's relatively overpriced. Second, it's a *one-in, one-out* interface—it only has a port for one synthesizer. If you ever buy a second keyboard, you'll have to buy another interface. Most other interfaces offer at least three outputs, so the Mac can play three keyboards simultaneously with only one interface. Passport Designs, too, makes a single-output interface—but at $130, it's even less economical.

MacNexus Interface, the sturdy, black steel interface from J.L. Cooper Electronics, has three outputs; it's rugged and heavy, and only costs $69.95. For ten dollars less, there's also the Mac-color, plastic, three-output MIDI Translator from Opcode.

Morty, however, discovered the least expensive (and least cluttery) interface on the market: the Altech MidiFace LC. This $49.95 interface isn't even a box; in fact, it looks more like a plastic hot dog. The cable to the Mac is built into the interface

LUIS DELGADO

Hey Mr. Tambourine Man Tim Self uses Opcode's EZ Vision, both a Roland W-30 and a Roland U220 synthesizer, a Yamaha monitor speaker, and Opcode's Professional Plus MIDI interface with a Mac SE in his home studio.

(unlike any of the others, which require a separate cable), and there are three outputs. It's warrantied for a year, works like a charm, and saved Morty money.

The Sequencer

There was only one more thing Morty needed: a sequencing program. In some ways, a sequencer is unique in Mac software; there's no Print command. You can't paste anything from it into PageMaker. To run it, you hardly use the Mac keyboard at all. But a good sequencer can turn you into an orchestra.

All sequencers are fundamentally alike: in one window there are *transport controls,* on-screen buttons labeled Play, Stop, Rewind, Record, and so on. You click on Record and play the synthesizer. When you click on Stop, every note you played appears as a strip on a horizontal bar graph. As with a tape recorder, you hit Rewind and then Play; the sequencer dutifully plays the synthesizer, re-creating your performance to the subtlest nuance. It's amazing how much musical feeling a sequencer can capture—especially when you realize that its idea of "feeling" is simply a stream of numbers about each note you played.

Morty soon discovered four sequencers costing under $150: Trax, One-Step, DeluxeRecorder, and EZ Vision (see "Sequencing Programs"). Each is marketed as an entry-level sequencer. Morty hoped that meant easy to use.

Making Trax

Trax, from Passport Designs, is a good example of a good sequencer (see "Trax to the Max"). Its manual starts at the beginning, even guiding you in the not-necessarily-intuitive act of connecting MIDI cables. And, as sequencers go, Trax is very easy to understand.

You begin by creating a list of independent musical parts, or *tracks,* that you plan to include in your piece. For example, your track list might include strings, piano, bass, and drums. Next to each track name, you enter its *MIDI channel* number (1 to 16). That's the Mac's big secret to playing many interweaving musical lines without forgetting which notes are piano and which are strings, by the way. You tell the Mac to broadcast the piano's notes on Channel 3, and you tell the synthesizer to play all Channel 3 notes using the piano sound. (It's not nearly as complicated as it sounds.)

Morty first got to play with Trax at a demonstration at his Macintosh user group. He soon got used to pressing the Space bar to start and stop playback—a shortcut for clicking the on-screen buttons. He liked the way Trax automatically stopped and rewound the sequence when he finished recording each part. He also loved seeing an overview of his entire piece. Trax represents each measure by a small black square (there is music in the measure) or by a hollow square (there isn't any). At a glance, you can see 32 measures or more, and you can cut, copy, or paste them instantaneously—no small consideration in a field as repetition-intensive as music.

LUIS DELGADO

The AMA—All MIDI Apartment Mike Higgins uses Passport's Trax sequencer, a Mac II, a Roland D 10 synthesizer, and various drum machines, analog devices, and keyboards in his San Francisco apartment.

After recording his steamin' piano part, Morty decided to get really creative and orchestrate. He named the second track Bass Line, assigned it to MIDI Channel 5, checked that the synthesizer's Channel 5 was set to its Funky Bass sound, and recorded the bass line while listening to his piano part play back. It was all too easy! Now he set the third track to be the drum part, on Channel 6. Finally, he sat back and listened to the piece. It was fine, but he noticed that his playing wasn't utterly accurate—every now and then the bass and the drums wouldn't land quite together.

Quantize Leaps

That's how Morty learned about *quantization*—that magical clean-up-my-sloppiness command found only in music programs. The Quantize command shifts the recorded notes in time so that each one falls neatly on the beat, or on whatever subdivision of a beat you specify. When Morty played his piece after quantizing, he certainly got what he asked for—but the piece sounded as if it had been played by a rhythmically perfect robot. He used the Undo command. (He was lucky this time. Trax's Undo command doesn't work with some operations.)

He tried the Quantize command again. This time, however, instead of sliding each sloppy note precisely to the beat, he used the Sensitivity setting in Trax to pull each note most of the way to the beat, maintaining some of the human touch. This time the playback sounded great.

The Next Step

The next sequencer Morty tried was a bizarre program called One-Step. Originally bundled with a long-discontinued MIDI interface by a now-defunct company, One-Step was rescued from obscurity by one of its fans. This fellow wrote a manual (something One-Step never had), made himself available for friendly, smart phone help, and began to market it. At a mere $69, One-Step immediately had Morty's attention.

Morty discovered some strange and wonderful things about One-Step. On a color monitor, the notes of each track appear in a different color. Furthermore, loud notes appear in darker shades than soft ones—a unique and useful feature. A Move dialog box can

instantly shift a selected chunk of music either forward or backward (in time), up or down (transposing), or both at once. And where Trax offers two or three useful quantizing options (such as Sensitivity), One-Step's Quantize dialog box is full of them: Delay, Tighten, Partial, and more.

There are some sophisticated features in One-Step, too, that made Morty realize what Trax lacked. For example, One-Step lets you view all kinds of *controller* information—non-note data such as pedaling, pitch bends, tempo changes—on a graph. You can actually edit the curved graph of a pitch bend or redraw pedaling patterns.

But Morty noticed something odd. One-Step's tracks are numbered from 1 to 16, and there's no way to label them; you have to memorize that Track 8 is harp, Track 11 is banjo, and so on. One-Step provides a "metronome" by playing a note on the keyboard; Morty missed the Mac speaker click provided by other sequencers. Morty grew annoyed when he found that the watch cursor made a ten-second appearance after recording each track. And because One-Step is a four-year-old program, it already lacks features that are standard on recent sequencers: *looping,* or specifying that a passage repeat a certain number of times; access to 16 additional MIDI channels by attaching a second MIDI interface; and compatibility with Apple's MIDI Manager software (see "MIDI Manager"). And One-Step's manual includes a whopping three-page list of bugs. Morty certainly appreciated the honesty, but wasn't reassured much about getting past Step One.

Deluxe Music-Making

Morty fell in love with DeluxeRecorder at a Macintosh show. "Now *that's* a sequencer," he thought. DeluxeRecorder displays the bars-representing-notes on a musical staff, making their pitches much easier to identify. The program makes brilliant use of the Mac keyboard. You don't even need the ⌘ key; you can just press Q alone to quantize, I or O to zoom in or out, and so on. And Morty was thrilled with DeluxeRecorder's unique, most remarkable feature: the program secretly records anything you play while your previously recorded music is playing back, even when you haven't clicked on the Record button. If you happen to play a lick you like, you can tell DeluxeRecorder to store it in a track, just as though you'd deliberately recorded it—a safety net in case you get brilliant.

Like One-Step, DeluxeRecorder lets you edit pedaling, pitch bends, and tempos graphically; but in DeluxeRecorder, you can do all of this and still see the notes in the same window. And there's a feature that lets you record freely, without playing to a metronome click (as you must in other low-cost sequencers). Afterward, you can tap in the beats and barlines as the music plays back—a feature only found in sequencers costing four times as much. Morty loved it.

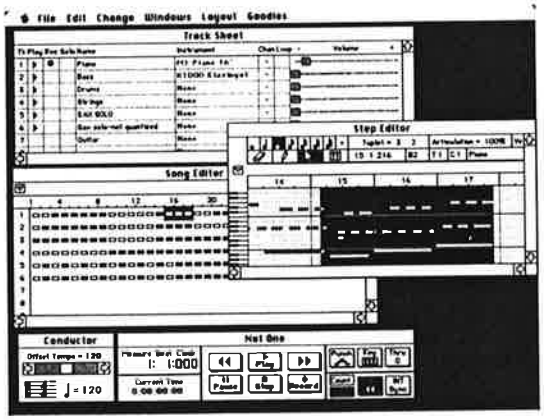
His credit card was halfway out of his wallet when it happened. Morty had just listened to a piece and clicked on Stop, but one nagging note kept playing. He clicked on Stop several times more; he pressed the offending key on the synthesizer. Finally, he turned the synthesizer off. Only then was the note silenced. Morty's first encounter with DeluxeRecorder's unfortunate bugs led him to discover that the program lacks an All Notes Off command (which most

MIDI MANAGER

The MIDI Manager is a special new piece of software from Apple, available from Apple dealers or music stores. The story goes like this: MIDI programmers were continually having to rewrite their programs to accommodate the slightly changed electronics of each new Mac model. Finally Apple created MIDI Manager to provide a common platform for all current and future Macintosh models. The idea is that if a sequencer works with MIDI Manager now, it will also work with any future Mac. Some current sequencers, like Green Oak Software's Rhapsody, don't run at all without MIDI Manager.

MIDI Manager lets you do some tricks you never could do before. For example, under MultiFinder you can run more than one MIDI program simultaneously, so—in theory—EZ Vision could record what Trax is playing.

MIDI Manager will become more important as software developers take advantage of it. To really use it, your Mac should have enough memory to run MultiFinder, and the MIDI programs you use must support MIDI Manager (One-Step and DeluxeRecorder don't). A stable version of MIDI Manager helps too: the current, 2.0, works much better than previous versions.



Trax to the Max The structure and relationship of Trax's main windows make the program especially easy to understand. The Track Sheet window displays your 16 tracks (and the synthesizer sounds they've been assigned to); the Song Editor is an overview of the piece; the transport controls appear in a floating window (bottom). If you double-click on any black square (full measure) in the Song Editor, the Step Editor appears (right), where you can edit notes one at a time.

NEXT STEPS IN THE SEQUENCE

Like anything high-tech, there's always a MIDI product that's better, more powerful, and more expensive. You can see such items at a music store, but here's what you can look forward to.

Keyboards There are essentially two kinds of MIDI keyboards: *synthesizers* and *samplers*. Synthesizers, like the famous (but non-multitimbral) Yamaha DX-7 or most Casio keyboards, generate sounds electronically. They're great for making spacey, unusual sounds—but their imitations of acoustic instruments usually aren't convincing. Samplers, on the other hand, use digital, compact disc (CD) technology; you press a key, and the machine plays back a short actual recording of the real Vienna Philharmonic string section. As a result, samplers can sound fantastically realistic. They can also be fantastically expensive—the best, like the Roland S-770 Digital Sampler, cost around $7000.

But there are also some hybrid synthesizers-samplers that sound great and don't cost a fortune. The Korg M1 Music Workstation, the Yamaha SY77, and the Kurzweil 1000 series play back sounds that began life as samples but are stored on a chip in the machine. (Thus you avoid the tedious disk-swapping required by full-fledged samplers.) At around $2000, these machines sound terrific—nowadays you hear them in many pop recordings, TV jingles, and film scores. They have touch-sensitive, full-size keys, too.

Interfaces Beyond the $50 basic interfaces there's a host of more-complicated devices. Altech sells the $79.95 MidiFace EX, a compact interface with an A/B switch—which lets you avoid unplugging the modem every time you want to use the synthesizer. Because the MIDI system and modem must share the same Mac port, an A/B switch is an essential feature if you own a modem.

Another group of interfaces, such as Opcode Systems' Studio Plus Two ($199), plug into the printer and modem ports simultaneously. That lets the Mac record from two keyboards at once—and gives you twice the number of available MIDI channels (16 from each port). Not all sequencers handle multiple-track recording, though, so inquire before you buy.

Some interfaces have two features coveted in professional circles: *time-code* support, and support for a profusion of additional MIDI channels. Time code is a system that synchronizes a sequencer with a multitrack tape recorder. Rewind the tape, and the sequencer rewinds to the same spot. Additional-MIDI channel interfaces, like the MIDI Time Piece from Mark of the Unicorn ($495), use sophisticated circuitry to provide you with 128 MIDI channels—a must for the true MIDI-head whose sequences include dozens of tracks and a whole rack of synthesizers.

Sequencers There are high-end sequencing programs that have some amazing features. Green Oak Software's Rhapsody ($225), Opcode's Vision ($495), Mark of the Unicorn's Performer ($495), Passport Designs' Pro 4 ($495), and Beyond from Dr. T's Music Software ($319) are some examples. Most of them offer an unlimited number of tracks, support for professional time-code systems like SMPTE (Society of Motion Picture and Television Engineers), multiple-track recording, powerful looping features, and a dazzling array of editing commands. And every one supports Apple's MIDI Manager.

Each high-end sequencer has unique features too. Performer can display what you've recorded in standard music notation, complete with beams and stems. (It's a bit crude—you could never read it like sheet music—but it's more intuitive than editing bar graphs. If this feature intrigues you, watch for Mac Ballade from Dynaware USA, a new sequencer that lets you view and edit notes *only* in notation form.)

Vision not only shares many of EZ Vision's smooth, clever interface features (one example is the remarkable "scrubbing" feature that lets you hear any music you drag the cursor over, backward or forward), but also offers 99 tracks per sequence instead of 16. Vision can even compose its own improvisations. Rhapsody, with the lowest cost-per-feature ratio of any sequencer, feels a little bit home-grown but has a unique system of cloning musical sections; each copy is linked to the original, so that when you edit the original, the copies are automatically updated.

Pro 4 is as simple to use as Trax (its sibling), but includes graphic controller editing, SMPTE time-code support, and an overdub recording mode. And Beyond 2.0, written by Jeremy Sagan (Carl's son), has a delightful multiple-takes recording feature: it keeps repeating what you've already recorded, while you play one version after another of a new musical line. The program records each of your attempts in a separate track; you can later choose which one you want to keep, or combine pieces of each. Dr. T's also sells Beyond 1.6 with MIDI interface (Altech) and a stripped-down version of Great Wave Software's ConcertWare+MIDI notation program in a $399 bundle.

Out of Sequence Once you know how to sequence, the world of multimedia awaits. You can incorporate your finished sequences into HyperCard stacks using Opcode's MIDIplay or Passport's HyperMusic. Just click on a button to play your sequence. You can export sequences as *MIDI files,* the common interchange format of all music programs, to music notation programs like Passport Design's Encore, or Coda Music Software's MusicProse or Finale, for editing and printing. There are MIDI-controlled mixers, lighting boards, and other devices, too; if you really want to, you can create sequences that play lights and fog machines with the music.

And if you're not quite that ambitious, you might just listen to some ready-made MIDI sequences of popular songs. MIDIclips from Opcode and MIDI Hits from Music Data, a division of Passport Designs, are MIDI files that any sequencer can play. Just pop them in, assign the tracks to the appropriate sounds on your synthesizer, and listen.

ONE-INPUT MIDI INTERFACES

Company	Altech Systems	Altech Systems	Apple Computer	J.L. Cooper Electronics	Opcode Systems	Passport Designs
Model	MidiFace EX	MidiFace LC	Apple MIDI Interface	MacNexus Interface	MIDI Translator	MIDI Interface
Price	$79.95	$49.95	$99	$69.95	$59	$129.95
Outputs	3 *	3	1	3	3	3
Includes cables	○	○	●	○	○	○

●=yes; ○=no. * Has A/B switch for modem.

other sequencers have). As time went on, he noticed other problems. The program doesn't import or export files properly, doesn't work at all with the MIDI Manager, and occasionally crashes mysteriously. Worse, a call to the program's marketer, Electronic Arts, revealed that no fixes or enhancements are planned for DeluxeRecorder. Version 1.0 it is, and version 1.0 it ever shall be.

Never was there a program so cleverly designed, with such easy-to-access power. It broke Morty's heart that the program would always remain in its not-quite-finished state.

EZ Enough

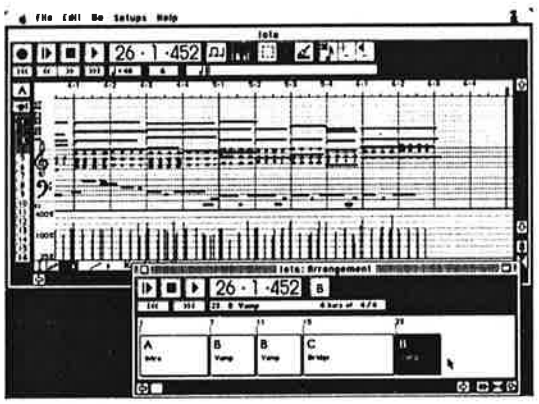
About a week later, Morty was back in the music store, this time to watch a demonstration of the newest inexpensive sequencer: EZ Vision, a more cleanly designed, easier to use version of the professional Vision program.

Right away Morty noticed three things he didn't like. First, like OneStep, EZ Vision doesn't allow you to see names (Zither, Accordion, Drums) in the track list—only track numbers. Second, there is no Macintosh keyboard equivalent for the Rewind command; you have to use the mouse every time. Finally, there's no Sensitivity setting for the Quantize command. EZ Vision snaps every selected note precisely to the beat, taking all the humanity out of the original performance.

But thereafter, all of EZ Vision's surprises were pleasant ones. Morty found the animated ball that bounces from beat to beat cute—then he realized that it actually was a superb visual metronome when he was recording. Seeing each track's notes in a different color makes editing a delight. And a small but glorious feature won him over. Where some sequencers let you specify the number of metronome clicks you want as a *countoff* before you record, EZ Vision lets you wait as long as you want before you start playing. In the meantime, it clicks endlessly, in a suspended state, and only begins recording when you play the first note. Morty found that this system gave him all the time he needed to get inspired (see "Music to Your Eyes").

Furthermore, each EZ Vision file is really 25 open files at once. Each of those files, labeled A to Y, can be a separate song or section of a song. Then, in the Arrangement window, you can drag the files into any order you want. Morty recorded a verse of a song and called it A; he recorded the chorus, and called it B. Finally, he dragged these two blocks around in the Arrangement window, trying an ABAB version, then an AAB version, and so on.

EZ Vision, too, lets you easily edit all kinds of controller information. And like Passport's sequencer, EZ Vision generally runs quickly and smoothly. Both Trax and EZ Vision are terrific, solid, easy-to-use sequencers; Trax is simpler, but EZ Vision has more features and flexibility—a first-timer's program that's tough to outgrow. Morty hoped he'd be working with MIDI for a long time, so he equipped himself with EZ Vision, the Altech interface, and the best synthesizer he could afford—the rudiments of a real home music studio.



Music to Your Eyes In this unusually complex snapshot of EZ Vision, you can see notes displayed in bar graph form (one color per track). Below the note display, there's a strip chart where you can graphically edit any non-note MIDI information: pedaling, pitch bends, volume, and so on. In this example, which was generated using a touch-sensitive keyboard, the vertical bars represent key velocity (how hard each note was struck). At the bottom of the screen is the Arrangement window, where you can rearrange various sections of the song.

Right to Lefty

A month later, Morty sat proudly in Lefty C. Dee's office as they listened to Morty's home-produced demo tape. It sounded sensational—crisp, multitimbral, and wrong note–free. "Mmm. Terrific tune," Lefty said. He slid a recording contract across the table. "There's only one thing I'd change," Lefty said. "Oh?" said Morty, busy signing papers. Lefty perked up. "I'd throw a screaming guitar solo in the middle. You know, like—*da dit DWEEEEE, dwee bubba bubba, skrawwwwng* . . . and then the bass could come in—*ka-toom toom toomba!* And then—*drum break!*" M

See *Where to Buy* for contact information.

***David Pogue**, a* Macworld *contributing editor, is a composer and conductor in New York. He's obsessed by the fact that* midi *means* "noon" *in French.*