MUSIC
TECHNOLOGY

STEVE
REICH
Stretching his Art

MARCUS MILLER
From Player to Producer

NEWS FROM ANAHEIM
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REVIEWS
Alesis MMT8
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Yamaha WX7
Elka MK88
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World Radio History

" " .

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EDITORIAL
Discovery and Rediscovery

WALKING DOWN THE aisles of a NAMM show (National Association of Music Merchants, the industry's trade convention) never ceases to fascinate me. Every shape, size, color and variety of musical instruments and related equipment are on display for the gathered music store owners, manufacturers, music press and other related industry personnel to see. Donning my hat as a journalist, I find it particularly interesting as a means of discovering where the industry is, in terms of both development and new trends.

Of course, as a musician, I also happen to love walking around, seeing and trying out all the newest gear. Nothing quite matches the feeling of walking from booth to booth, finding out what the manufacturers have dreamt up in their quest to entice our money from us. About the only bad thing that results from attending a NAMM show is that you inevitably leave with a serious case of the wants. The meaning of the words "gimme" and "more" take on an entirely new significance when you're surrounded by all the newest synths, drum machines, processors, etc. (For your own case of technolust, turn to our in-depth show report.)

The obvious reaction to all this new gear is to think about all the music you could create and all the things you could do if you only had the latest Rolamaha megasynth. But what about the stuff that currently sits in your home MIDI rig? Are you making the most of it, or are you just not willing to invest the time necessary to make some more discoveries? I recently had an interesting experience which helped reinforce some of my ideas on the matter.

I brought home the Kurzweil 1000 after Chris Many finished reviewing it for last month's issue (one of the benefits of a job like this) and had a great time checking it out for myself. One of the instrument's strong points is the Kurzweil Grand Piano patch. Do you realize how much music has been written with that single patch? I mean you could keep yourself going for many a lifetime without even making a dent into all that music, and it's just for one patch. Admittedly, it is a rather important sound, but theoretically, any of the 64, 128 or more patches available on any synths that you may have is capable of producing that much music.

It's a rather incredible thought, but that's the wonder of synths, samplers and other electronic instruments. It's a wonder that often gets overlooked, though, particularly when things like the NAMM show take control of our normal sensibilities and make us want more and more hi-tech toys. Not that a bit of equipment desire is bad, mind you; it gives you something to look forward to. Plus, we all know that one instrument's sound will eventually grow old (at least until we have relatively inexpensive instruments that have the sonic richness of acoustic instruments like the grand piano), but it's much too easy to think that you need a new instrument and new sounds to be creative.

Locked within the plastic and metal of most modern instruments is a lot of potential for interesting sounds. It may take a bit of work to get to them, but they're certainly there. Half the fun of working with synths and samplers is discovering the kinds of sounds that are possible. And once you get the sounds you want (or feel like you've reached a point where you can't get any more), there's a lot to be said for practicing and working on playing them more expressively and/or creatively.

Exploring the capabilities of your gear can lead to some amazing discoveries, not to mention the joy of rediscoveries, which manifest themselves in the working knowledge that exploring provides you with. The possibilities are staggering, so long as you try to find them.

A lot of music is waiting to be created from the string/bell patch #23 on that old synth of yours. Don't give up on it yet. ∎
Bob O'Donnell

Dedicate

Dedicating yourself to your music often means working long hours at your mixer experimenting with effects. But, sometimes this can be frustrating. Like when you get the urge to add reverb to a vocal and you find yourself running around the back of your mixer fumbling with cables. Getting confused. While your concentration and your music suffer.

Serious studios solve this problem by connecting each effect send on the mixer to individual signal processors. Always plugged in. Ready when the ideas come. *Dedicated.* Turn a couple of knobs and you hear results. Instantly.

Until now, though, dedicated signal processing was only affordable in high budget studios.

Alesis has a solution. **The Alesis Micro Series.**

Led by the new MICROVERB® II, the Micro Series comprises the four most important signal processors in any recording rig: Digital Reverb, Limiter/Compressor, Gate, and Enhancer. Designed with the Alesis magic that combines totally professional features with ridiculous affordability, they're at home with 4 tracks . . . or 48.

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The Alesis Micro Series belongs in your studio. Because it's as dedicated to music as you are.

ALESIS
STUDIO ELECTRONICS

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NEWS DESK

ZETA UPDATE

A new software update for the VC220 MIDI Violin Controller is available from Zeta Music Systems. The upgrade allows storage of 64 program setups, MIDI transposition within a six-octave range, and the ability to play while in the Command mode.

Also new is the MFS40 Footswitch for use with their MIDI Violin Controller, which allows program setups to be chained together in song order for easier access. Also included are a Hold switch, a Sustain switch and a Bypass switch.

The VC220 Software Upgrade is $100, installed. The MFS40 Footswitch has a suggested list price of $199.95.

MORE FROM Zeta Music Systems Inc, 2823 Ninth Street, Berkeley, CA 94710. Tel: (415) 849-9648 or (800) 622-MIDI

TRAVELLING WITH EWI

EWI/EVI owners may be interested in a new hardshell case available for their instruments. The case can hold both the

instrument and the EWV2000 Sound Module, and a detachable lid allows the module to remain in the case during use. Compartments are provided for holding sheet music and small accessories.

The suggested retail price is $99.95.

MORE FROM Akai Professional, PO Box 2344, Fort Worth, TX 76113. Tel: (817) 336-5114.

CONSUMERS INVITED

Music Expo '88 is being touted as "the world's largest showcase for music and music-related products," with over 200 manufacturer and vendor exhibits structured for consumers. The Expo is being held at the Long Beach Convention Center in California between April 29 and May 1, 1988.

In addition to a variety of product exhibits, varying from band instruments to digital instruments, the coordinators are promising demonstrations, seminars, live performances, sweepstakes and individual product promotions.

MORE FROM Musex Inc, 723½ N. La Cienega Boulevard, Los Angeles, CA 90069. Tel: (213) 659-0701.

OB8 RETROFIT

Magic Parts Co. has announced the release of a MIDI retrofit kit for the Oberheim OB8 synthesizer. The kit is modeled after the original Oberheim kit, allowing the user to convert the unit to full MIDI implementation. Included with the kit is B5 software, for improved operation of the OB8 with the DSX.

The suggested retail price is $295.

MORE FROM Magic Parts Co, 1537A Fourth Street, Suite 198, San Rafael, CA 94901. Tel: (415) 453-8606

COMPETITION FOR DIGITAL PERFORMERS

The Bregman Electronic Music Studio of Dartmouth College, in association with New England Digital Corporation, are inviting musicians to submit their entries to the "Competition for a New Work for Live Performance on a Digital Performance Instrument." First prize wins $5000.

Composers must submit a video tape on VHS, Beta or ¾" format showing a performance of a work which is no less than eight nor more than 30 minutes in length. The composer need not be the performer, but must provide a performer for the work.

Entries must be received by June 1, 1988, and the winner will be announced August 15, 1988. The winner will be brought to Dartmouth College for a performance of the work during the Synclavier Summertime Seminar on August 27, 1988.

Works must be sent anonymously, with a *nom de plume* affixed to the video tape and container. A sealed envelope, showing only the *nom de plume*, must accompany the submission, containing a piece of paper listing the *nom de plume*, composers' name, composer's date and place of birth, address and phone number, title of work, place work was composed, format for work submitted, duration of work, a brief biography, and brief description of the work submitted.

These folks are *serious*. The judges are Laurie Anderson, Jon Appleton and Steve Reich.

MORE FROM The Bregman Electronic Music Studio, Hopkins Center, Dartmouth College, Hanover, NH 03755.

GOLDEN MIDI COMES OF AGE

Cover music sequences are available from Golden MIDI Music and Software, covering a range of club and lounge music with a mixture of current, recent and oldies titles. The initially supported hardware sequencers include the Roland MC500 and the Yamaha QX5 with MDF1 drive, and software sequencers (all for the IBM PC and compatibles) include Promidi, Sequencer Plus, Texture and Cakewalk. Initially supported drum machines are the Yamaha RX5, the Roland TR626 and TR505, and the percussion section of the MT32.

According to the vendor, special variants of the master sequences can be ordered for the ESQ1 internal sequencer, which drives a maximum of eight channels.

Also available is the Golden MIDI System Manual for $49.95, which contains the plans and assembly instructions for a MIDI playback system.

The sequences list for $19.95 each.

MORE FROM Golden MIDI Music & Software Inc, 1020 15th Street, Suite 29K, Denver, CO 80202. Tel: (303) 534-4055

ERRATA

We'd like to apologize to New England Digital Corporation for a Newsdesk item which appeared in the January 1988 issue. As they kindly pointed out, "Direct-to-Disk" is a registered trademark of NED and should not be used in any context other than describing the disk-based recorder manufactured by the company. Our apologies . . .

READERS'
LETTERS

**Send any questions or comments that you may have to:
Readers' Letters, Music Technology, 7361 Topanga Canyon Blvd., Canoga Park, CA 91303.**

Dear Music Technology,

Recently, while at a Dan Fogelberg concert at Westbury Music Fair on Long Island, I had the privilege of hearing a MIDI-modified Yamaha concert grand piano. What a wonderful sound; a concert grand triggering strings along with the sound of a human choir from synth modules located elsewhere. Now, I had heard of this modification being done before but this was the first time that I had actually seen, or heard one.

Anyway, how can I have this modification done to my piano? I'm tired of trying to get authentic piano voices from my synth. I own a beautiful 1957 Yamaha studio upright and would like to use this as my mother keyboard. Can the mod be done on this instrument? If so, who does it and what kind of costs are involved? And when this modification is done what kind of MIDI implementation is then available to the instrument (eg. MIDI channel transmit, velocity, aftertouch)?

Lastly, while demonstrating this MIDI-mod to his audience, Dan started to play various brass parts from the piano keyboard without any piano sound emanating from the grand at all. Can you please explain how this was done?

Thanks for your time and courtesy. I'm sorry for such an abundance of questions but I really was quite impressed.

**Bob Stack
Sayville, NY**

Well Bob, the folks at Forte Music who make the MIDI-Mod you saw retrofitted onto Fogelberg's acoustic piano certainly didn't mind your questions. They pointed out that the modification can be done to any acoustic piano, including uprights, for a suggested retail price of $1895 (including installation). The MIDI implementation includes note-on with velocity and sustain from the piano's sustain pedal. The MIDI-Mod is a two-channel system and the data can be set on any two channels at once or one at a time. You can set two independent zones for each of the channels and you can independently transpose the zones by any interval. As for playing the piano without hearing its sounds, the people at Forte mentioned that Fogelberg occasionally uses a sampler for the piano sounds and doesn't actually amplify the piano's natural sound.

Also, it should be pointed out that both Yamaha and Kawai offer pianos with built-in MIDI capabilities. They're a bit more expensive, but they do represent another option.

For more info on the MIDI-Mod contact Forte Music at PO Box 6322, San Jose, CA 95150. Yamaha can be reached at 6600 Orangethorpe Ave, Buena Park, CA 90620; and Kawai is at 2055 E. University Dr, Compton, CA 90224.

Dear Music Technology,

Thank you for printing my brother's letter about Laurie Anderson's horrible anti-marching band attitude. He wouldn't believe that you actually printed it until I brought a copy home. When he saw that letter, he was so proud that he went upstairs and put on his old cassette of the Army marching band. He recorded it live when he was pretty little, so most of it is just the sound of the marching. Yet, I'm sure that what he would really want to thank you for is printing the letter in your January issue from the gentleman in Macon, Georgia whose opinions on the subjects of Laurie Anderson and marching bands are so different from Ernie's. You see that's what marches are all about – American freedoms such as freedom of the press, and freedom of opinion. And that, more than anything, is why we can't let people such as Laurie Anderson take our marches, band uniforms, sheet music and union seamstresses and qualified repairmen away from us. I, for one, don't think that General Sherman had drum triggers sewn into his clothing when he led that triumphant march from the great North (not Ollie) into Georgia. My guess is that he was preceded by a marching band, and I'll bet they were using sheet music, too. This is what Laurie's Georgian friend is really mad about. That's okay, though, I doubt if Jimmy Carter had a sense of humor either.

You have probably noticed that throughout this letter I have been referring to my brother, Ernie, in the past tense. You see, Ernie is no longer with us. He was killed in a tragic MIDI accident two weeks ago when he used a Macintosh in an effort to MIDI his Vespa motorscooter to the microwave oven. When he tried to boot the software, the microwave door flew open and he took a frozen burrito to the head. It was a mess and there's still so much

microwave interference in the house that I can't pick up Laverne & Shirley on the TV. Anyway, if Ernie were still here, I'm sure he would want to thank you for printing his letter. Well, I guess I'd better go now. Michael Jackson is coming over for dinner and I have to get the hyperbolic dinner chairs out and hide my Diana Ross albums.

**Angst Existential
Billings, MT**

Dear Music Technology,

First, let me thank you for your review of my program Music Mouse in your December 1987 issue.

It lodged a complaint which deserves further comment though, about my stipulating that credits for music performed or recorded using the program should state that it was used. Though this response may seem out of proportion to that complaint (which was minor), it made me realize that a certain amount of explanation needed to be printed somewhere (for which, thanks in advance). Here it is:

Music Mouse is actually an interactive compositional algorithm, not a general purpose tool like a word processor. It takes an active part in the creative process, selecting pitches, harmonizing lines, and structuring and guiding other content, rather than playing a passive role like record-edit-retrieve systems. This would be like a word processor providing syntax, wording, story line, plot or character to its user rather than just recording typed input.

A compositional algorithm represents an individual musician's work in a kind of shorthand, by description of method, as a process, system, or rule set, instead of as ordered groups of notes (finished pieces). The design of a musical algorithm may be pure hypothesis or partial self description for its composer, but it is just as much a real musical work as any other more traditional kind.

Because Music Mouse was the first "expert system" for creative production to hit the market, it had to establish some precedents. When I first wrote it, my copyright lawyer and various composers considered Music Mouse to be an open-form interactive musical composition. But I felt it was actually a new kind of musical work, not a composition. Unlike my earlier programs which I had kept private for my ▶

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The opportunities are unlimited for the person who's trained to take advantage of today's electronic music phenomenon. Now you can prepare for a high-paying career as a studio technician,

sound engineer, recording engineer, or road technician...even start your own new-age business providing one-stop sales and service for musicians, technicians, and general consumers alike. Or simply unleash your own musical creativity with the breakthrough training and equipment only NRI gives you.

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With your experienced NRI instructor always available to help, you master the basics of electronic theory step by step, gaining the full understanding of electronics that's now so essential for technicians and musicians alike. You move on to analyze sound generation techniques, digital logic, microprocessor fundamentals, and sampling and recording techniques...ultimately getting first-hand experience with today's explosive new technology as you explore MIDI, waveshaping, patching, sequencing, mixing, special effects, and much more.

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▶ own creative use, I decided to make this one available to others as a musical method, as long as music produced with it would credit my participation through it.

I put a lot of myself (as a composer) into my programs, and several published reviews substantiate this by describing Music Mouse as a "piece" or "a Laurie Spiegel composition" or as embodying my own "stylistic template" or "recognizable style and musical sensibilities." It is certainly also a tool or method for others, and music produced with it is also very much the work of each individual user and varies considerably from person to person, despite the content and feel imposed by the program.

Our traditional musical culture (including royalty and copyright law) is accustomed to seeing one single composer have full creative control while performers and instruments are relatively passive participants in the compositional process. These specialized roles are clearly breaking down, but even jazz and rock have yet to be adequately dealt with legally as multiple-composer forms. It will be a long time before the question of collaborative use via musical algorithms is thought through, along with other situations in which different people's creative decision-making processes, aesthetic sensitivities, stylistic orientations, etc, interact during the compositional process instead of after it. The least we can do while these questions are being raised and worked through is to document what's actually going on. Crediting Music Mouse does that. It leaves a record of the beginning of a new kind of musical interaction.

I would not have asked for this crediting if the program were unsuitable for professional use as your writer suggests, but Music Mouse is used by professionals to make music for film, TV, dance, records, and live performance. As an "expert system" it also has allowed untrained musicians to do professional work for which they would otherwise have insufficient technique, to "make it" by musicality instead of chops. A mere verbal credit for the participation of this program is hardly out of line when it's a near-universal professional practice already for liner and program notes to include long lists of musical production tools, such as synthesizers and tape decks which contribute far less aesthetic content than do Music Mouse's logic and method.

Music Mouse is just a small first step in a new direction. Because it will doubtless have followers which none of us now dream of, I'd also like it to set a precedent whereby all creative contributors to an aesthetic experience get credit for the nature of their participation. This includes software-based generative algorithms and interactive processes and their creators. If people don't acknowledge new forms of human interconnection (collaboration) and expression (software), then others who create them may give up or keep such new methods to themselves. This can be a more isolating world or a more interconnected one. I prefer the latter but music can express either in its state of the art.

I'm sorry that the author of the review feels it's too much of a burden to acknowledge using Music Mouse for music he may make with it. Were this program as aesthetically neutral and de-personalized as his word processor and not a new kind of thing trying to set a precedent I would certainly not have asked it. I hope this letter has helped clarify for him and for your readers why I did.

Aside from all these comments, thanks for the excellent magazine you publish.

Laurie Spiegel
New York, NY

Reviewer Stefan Lipson replies: Your letter was certainly thought provoking. While I recognize the dilemma that a developer faces in legally protecting a creative work, I am still troubled by some inconsistencies in your argument.

You want credit for your "remote creative collaboration" as you refer to it, and yet you don't acknowledge the people who, by creating other tools, made it possible for you to create your program. Dale Luck, Bob Pariseau and the others who are praised for creating the Amiga operating system and the ROM kernel upon which your product relies, are not mentioned anywhere in your program or in your documentation. In fact, no members of the design team for the Amiga ROM kernel, the Macintosh Finder, or the operating systems of either machine are mentioned. These tools are not record/edit/playback systems either, and the individuals who created them deserve credit because without their creativity, without their contributions, Music Mouse simply would not exist.

By the same token, you mention your skills as a composer. Most certainly you have been influenced by a community of composers who preceded you and whose ideas helped to shape your musical sensibilities. You incorporated those ideas, some consciously, others unconsciously, into your own musical identity; they helped to give you the sense of harmony and melody and musical logic which you, in turn, programmed into Music Mouse. But again, you have not given credit to the people who shaped your compositional identity. Aren't they also responsible for your work? Don't they deserve some credit?

No musician or artist should be deprived of credit for his or her creative endeavors, but I see a distinction here. A person who makes a contribution to a creative work or who provides a tool to help realize that work should most certainly be recognized for his or her contribution. But not all contributions warrant recognition at all stages of production. Your name is prominently displayed on the outer jacket of the program, on the diskette, and on the opening screen of the software. If your name were not prominently displayed, then you would genuinely have been deprived of your due.

There is also a point at which your concept of remote composer status works in reverse. It is possible to generate some terrible sounding stuff with Music Mouse, the kind of music you don't want your name associated with. And yet by virtue of the specified agreement, Laurie Spiegel, as a remote collaborator, must in part take responsibility for whatever music is produced. I don't think that's fair to you.

You also referred to Music Mouse as an "expert system" which is inaccurate. Expert systems incorporate principles of artificial intelligence in which the software is equipped to "learn" over time, to increase its own knowledge base. Music Mouse does not do that. It's deterministic. It has no independent ability to think, no capacity for temporal reasoning and no inductive skills.

You make a good point, however, about a non-musician who creates a score with Music Mouse. In this instance, you, Laurie Spiegel, are in a sense the sole composer; without Music Mouse, a non-musician could never create the piece. A non-musician relies solely on your compositional skills (coded into the program) to create music. Crediting you as such is appropriate.

Aside from this philosophical stuff, I still believe Music Mouse to be a good program.

Dear Music Technology,
In response to your first wish in the January editorial, "Future Wishes," I suggest that someone create a Music Instrument Documentation Interface appropriately subtitled, "The Music Instrument Manufacturer's Style Guide and Format Specification for Writing Readable User Manuals in the English Language."

Perhaps you could interest your contemporaries at GPI, Hal Leonard Pubs, Alexander Pubs, et al. to form a standards committee to look into the matter. A format specification could be constructed by including the best elements from the various formats that are now used in the Technical Publications industry, eg. the Information Mapping format. If a documentation standard were accepted and subsequently implemented by the music industry, perhaps the concept would spread to the computer industry and elsewhere.

Oh, and while we're wishing, I wish that the audio and music industries would develop the necessary hardware and software to enable me to derive my own audio mixes from the pre-recorded music I purchase. When I listen to a song I sometimes wish that I could remix some of the tracks so that I could hear a particular instrument or vocal track more clearly. Perhaps a multichannel DAT player would do the trick. Perhaps I should save this idea for next year.

Best wishes for the rest of the year and thanks for a great mag.

Tom Scrivano
Costa Mesa, CA

Thanks for the feedback Tom. While I can't speak for the other publishing operations, I personally think it would be rather difficult to develop and implement a standard for owner's manuals that manufacturers would agree to. Too many different types of products are available and too many manufacturers have different ways of approaching manuals. Admittedly, it's a nice idea in theory, but I'm not sure it would work in practice. ■

"It's a miracle this thing even exists."

STEVE PORCARO,
TOTO

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digital programmer, and
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On stage, the DMP7 gets your act together. In the system shown here, the outputs from several keyboards or tone generators and our RX-series Digital Rhythm Programmer are mixed to "stereo." The DMP7 also adds effect processing at this point.

The FC7 Foot Controller sets the output level of the entire system. An MFC1 MIDI Foot Controller, connected to the DMP7's MIDI IN terminal, provides even more foot control

capabilities. The MFC1 can be programmed to switch memory presets simply by tapping a footswitch.

By connecting an FC7 to the MFC1, you can independently control specific faders, effects or other DMP7 parameters, for the ultimate in expression and control.

MIDI routing is done through YME8 MIDI Expander. Sequenced program and parameter changes are controlled by the QX5 Digital Sequence Recorder.
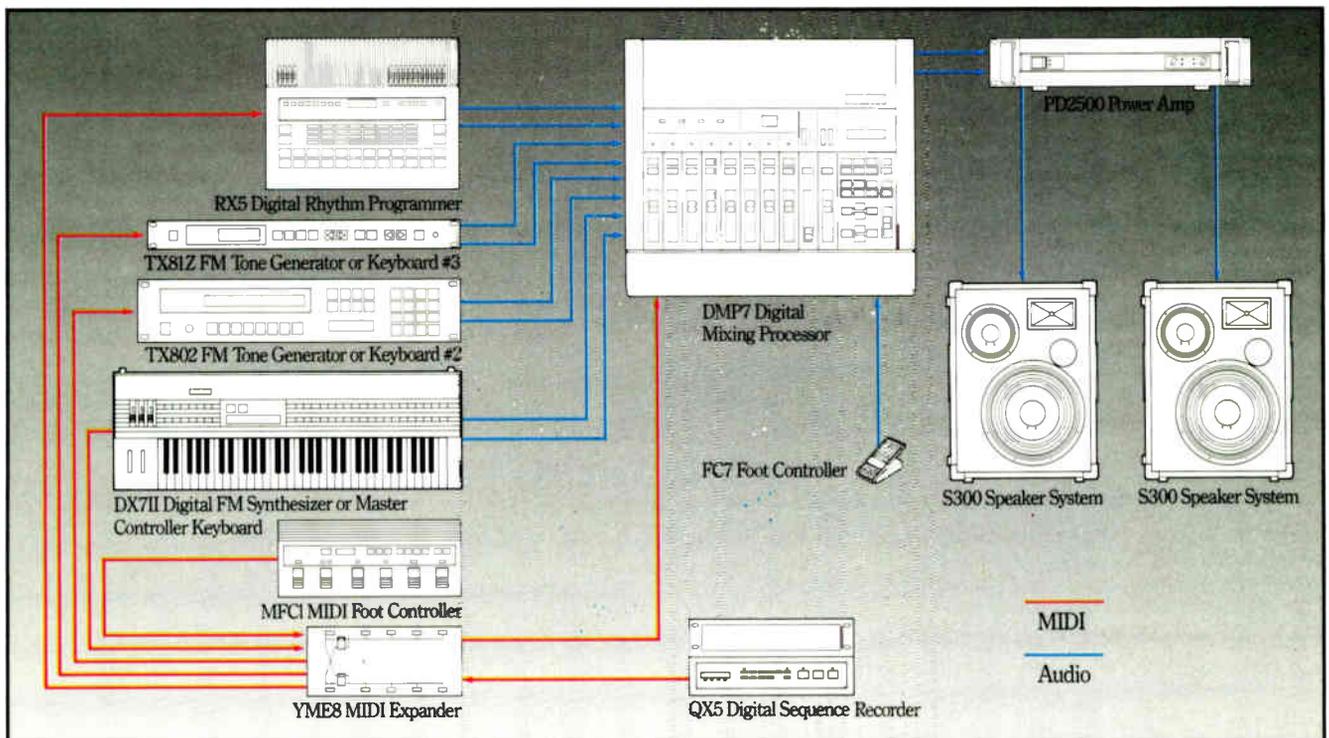
RX5 Digital Rhythm Programmer
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TX802 FM Tone Generator or Keyboard #2
DX7II Digital FM Synthesizer or Master Controller Keyboard
MFC1 MIDI Foot Controller
YME8 MIDI Expander
QX5 Digital Sequence Recorder
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FC7 Foot Controller
PD2500 Power Amp
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Kawai KI and KIM
Digital Multi-Timbral Synthesizers

The company's latest keyboard and module utilize sampled digital waveform technology that could prove to be an inexpensive alternative to the D50. *Preview by Bob O'Donnell.*

THOUGH SUCCESS MAY breed contempt, it also breeds competition. In the world of synthesizers, the current success story is the Roland D50 and its unique L/A synthesis method, which allows you to attach together sampled waveforms or combine them with traditional square and sawtooth waves. The voice structure (which is also available in the inexpensive MT32) allows you to produce a variety of sounds that are available with samplers, including realistic acoustic sounds as well as complex manipulations of sampled sounds, but without the hassles associated with sampling.

The first new synth to adopt a somewhat similar approach was Ensoniq's SQ80, which adds a number of sampled attacks to the existing waveforms found in the ESQI. Now Kawai has come out with its answer to that new type of sampled waveform synthesis, the KI. Based on a look at the initial specs, the KI does not appear to use the exact same kind of voice structure as the D50 or the SQ80, but comparisons are inevitable. The price is significantly lower, however, so it could prove to be a real winner.

The single biggest spec worth touting on the KI is its impressive choice of 256 different on-board PCM waveforms, some of which are multi-sampled and some of which are up to one second long. The sounds are stored in eight-bit format, but at full volume and without any envelope information. Consequently, when they're run through a volume envelope on playback, a floating point output scheme is used which should provide a dynamic range that's significantly higher than the theoretical limit of 48db (8×6db). The choice of waveforms runs the gamut of acoustic sounds and includes one-shot transients like the hammer strike of a piano, the snap of an electric bass, a number of percussion sounds from the R50 and R100 drum machines, and the breath of a flute; as well as a number of looped sounds, such as strings, voices and piano sustain.

A single patch on the KI consists of a combination of either two or four of these samples, which are each played by "sources." A joystick on the front panel of the KI and KIM allows you to adjust the balance between the sources in real time. Like the MT32, the instrument can play a total of 32 sources at once, so the total polyphony is 16 voices for patches with two sources and eight voices for patches with four sources. One other nice feature that the KI shares with the MT32 is that up to eight different timbres can simultaneously play and they can be dynamically allocated.

A quick glance at the parameters for each of the individual sources within a single patch offers a good glimpse into the instrument's capabilities. Each source has a delay control which permits bringing the sound of the source into the patch after a brief delay, as well as a normal ADSR envelope dedicated to an amplifier. The basic frequency of each waveform can be adjusted with coarse and fine controls and can be affected in real time by a dedicated LFO, a Vibrato control and an Auto pitch-bend function. Pitch and amplitude levels can also be modulated in real time by velocity, aftertouch and keyboard scaling. Finally, two sources can be ring modulated (AM) to produce some "out there" metallic sounds. Oddly enough, the KI doesn't have any filtering capabilities. None of the PCM partials on the D50 can be filtered either, however; only the square and sawtooth waves from the synth partials, so I guess it's not that surprising.

Up to eight single patches – of which the KI can hold 64 – can be combined into a multi patch – the KI has room for 32 of those. (Optional RAM and ROM cards can double that capacity.) These are strikingly similar to the very powerful multis available on Kawai's K5 additive synth. Each single patch within a multi can be assigned its own MIDI channel, keyboard zone, velocity zone (two are available per key), transposition, fine tuning, level, pan position (L/C/R), control status (keyboard or MIDI), and polyphony (a fixed number of voices or dynamic allocation). All single patches in a multi can also be set up to independently respond to various MIDI controllers, such as pitch-bend, mod wheel, etc. As on the K5, splits, layers and flexible sequencing setups should be easily conceived with these multis; though it'll be a bit harder with the KI's smaller 16×2 back-lit LCD display.

The KI's 61-key weighted keyboard responds to both velocity and aftertouch, an impressive feat for such an inexpensive keyboard. The KIM is not rack-mountable, but instead is configured as a table-top box which is roughly equivalent in size to the company's R50 drum machine. Both units offer stereo outs, a headphone jack, a memory card socket and MIDI In, Out and Thru jacks.

Speaking of MIDI, the KI's MIDI implementation includes the ability to operate in the increasingly popular Multi mode (though it's not even an official part of the MIDI spec) and to respond to new MIDI Registered Parameters for remote control of functions like tuning, pitch-bend amount, etc.

Based on a quick listen I got at the recent NAMM show, the KI could prove to be a formidable contender in the under $1000 price bracket. Though it doesn't quite have the sonic richness of a D50, it is capable of producing some very big sounds and its on-board drum sounds were quite nice. Definitely worth a good listen. ∎

PRICES KI $795; KIM $495

MORE FROM Kawai America Corporation, 2055 E. University Dr, Compton, CA 90224-9045. Tel: (213) 631-1771

Elka MK88
Master Keyboard Controller

The latest offering from this Italian manufacturer is an extremely flexible MIDI control center hampered only by a rather Byzantine operating structure. *Review by Deborah Parisi.*

F THERE'S ONE thing I love, it's a user-friendly piece of equipment. You know the kind I mean – the sequencer on the ESQI, the mouse/folder configuration on Ataris and Macs, the programming ease of the D50 ... that kind of thing. And nothing drives me up a wall quite so quickly as a user-alienating obstacle course – owner's manuals translated literally from the Japanese, "complementary" software packages that won't talk to each other . . . get the picture?

By my own standards, I should hate Elka's master keyboard. It's just *not an* easy instrument to get a handle on. I mean, if you've already had to learn to play the keyboard, and program the sounds, and control your sequencer and drum machines, you certainly don't need to spend mega hours learning another set of commands, right? Right?

Wrong. At least in the case of the MK88. From the terrific feel of the 88 weighted keys to the programmable control of everything from split points to polyphonic aftertouch, this is an instrument worthy of the effort. And in all fairness, the review model was not accompanied with a final owner's manual; I received a xeroxed copy of something called "Temporary Operating Instructions." Perhaps when the final documentation has been prepared, learning to use the keyboard will be somewhat easier.

The Facts, and Just the Facts

THE ELKA MK88/55 is a master control keyboard which has two independent MIDI Outs and thus can control up to 32 MIDI sound modules, keyboards and effects units. (The 55 has 61 unweighted plastic keys and is encased in a lightweight plastic package but otherwise is the same

instrument, I'm told.) 128 programmable Performance Presets are available, grouped into four internal banks of 16 and four external banks of 16 which can be stored in a RAM cartridge. Each Performance Preset contains specific information on things like splits, MIDI channels, and dynamics curve settings; Set Up parameters like program changes, volume settings, song selection, and the like – included in the MIDI Patch portion of the preset – and general control settings for all of the various footswitches, function buttons, pedals, sliders and wheels on the MK88. The 32-character Liquid Crystal Display allows you to see the operations as you work through them (though I wished several times I could move it up and down or adjust the brightness – it's sometimes difficult to read).

The instrument's "dashboard" provides an impressive display of programming options, including Split Point, Transpose, MIDI Channel, Dynamic and Aftertouch response curve settings, Function Buttons, Delay/Echo and Loop. Controlling them works on the same principle as a multiplication grid – you line up a blinking red light on the left, select the option you ▶

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▶ want to program on the bottom, and where the two intersect, that's what you're working on (basically, that is; it does get a bit more complex when you begin telling the computer which split zone you want to affect). Also up top are two wheels (one that springs back to center and one that stays put), four data sliders (one specifically assigned to control the tempo of an external sequencer or drum machine), and Start/Stop buttons. To the right of the central controls are Bank/Split/Free buttons for use in setting up Performance Presets, and Editing controls.

The back panel includes five MIDI sockets, two each for MIDI Out 1 and MIDI Out 2, and one for MIDI In. MIDI Out 2 provides MIDI Clock output for use with drum machines and sequencers, a real necessity for a master controller these days. The MIDI In jack performs the normal job of allowing an external MIDI clock to disconnect the internal clock, but it also allows an external instrument to be added to the control system of the MK88 so that all functions programmed into Split Zones 5 and 6 will be valid for the external instrument. The idea is that you can hook up a synth that doesn't have the MK88's capabilities – the old DX7, the DW8000, etc – and create a split keyboard where one didn't exist before. The system works by combining the output of the external keyboard with the processing of the MK88. Unfortunately, I wasn't able to pull this off, and the US distributor's technical expert wasn't sure how to do it either. Maybe when the owner's manual is finished . . .

Also on the back panel are two jacks for pedals, which can be assigned control over volume, modulation, pitch −, pitch +, pitch +/−, dynamic value (for setting the level of an adjustable response curve in any of the individual splits), foot control and touch. These accompany four footswitch pedal jacks, two of which can be used to control sustain, portamento, sostenuto, soft, modulation, program change, Elka Program (for use with other Elka instruments only) and Note On/Off. In addition, both the footpedals and footswitches can be assigned to send user programmed MIDI messages (programming is done in Hexadecimal) and any MIDI controller messages. The third pedal jack is dedicated to advancing through Performance Presets and the fourth is dedicated to activating the Full Mode (details to follow). The MP7, an optional accessory, contains three pedals and three connectors on one board, making connection and foot operation really handy.

Making It Work

THE FIRST STEP in programming the controller is the selection of split zones – up to six for each Performance Preset. Zones, which can overlap for layering

18

effects, can be programmed in "Split Mode" or "Full Mode." In split mode, each of the programs assigned to a zone will only play in their zone, but by turning on full mode with the footswitch, the patch for the currently active zone will place across the entire keyboard. In effect, this allows you to have up to six different programs available within one Performance Preset.

Setting the zones requires a number of keystrokes (as do all of the functions). The Panel button is depressed to enable the editing buttons; the LED indicator is moved to the Split Point position by means of Up/Down buttons; the appropriate split button (1-6) is selected to determine the number assignment for the split; the Split button on the left is depressed and held; and the low and high notes desired to define the zone are struck. This probably sounds worse than it actually is – once I'd done it a few times, it only took about 10 seconds to set up a zone.

After you've got your zones set up, you go on to programming the various parameters for each of them. I started with Program Changes, naturally, and ran into a minor flaw – there's no really easy way of scrolling through patches on your module. To make program changes, you have to go through a four-step process that's even more cumbersome than setting zones. The MK88 is obviously not designed for an impromptu jam session.

Each zone can be assigned its own MIDI channel and transposed over a two octave range (one in each direction). In addition, each zone can be programmed to respond to one of 19 (!) different dynamics response curves (graphically depicted on the front panel) and one of eight different aftertouch response curves. The curves are of the positive and negative variety so that if two zones overlap, the two different types of curves can be combined to create crossfades between two sounds. In addition, the MK88 can be set to send polyphonic or channel aftertouch, or the aftertouch messages can be converted internally to modulation data, pitch-bend, foot control, one of four volume ranges or they can be turned off. Consequently, even if your modules can't respond directly to aftertouch, the MK88 allows you to take advantage of its expressive control. Nice.

Next up is the setting of the instrument's various general controls. You can activate the various split zones for full mode operation as well as assign the various sliders, footswitches and wheels to control the available parameters, as mentioned above. The settings for each of these can be different for every Performance Preset, so the MK88 can be easily reconfigured.

The delay/echo effect is a lot of fun to play around with. You can set it up to get a delayed replica of the original note played,

or up to five echoes, in sync with the clock frequency (internal or external). Eight different time delays are available, which are based on functions of a bar played with respect to a fixed tempo – in other words, changing the tempo affects the speed of the echo.

The looping function is unusual on a controller keyboard, and to my mind is of dubious merit – how often would you need four bars of notes repeated over and over that you wouldn't put into your sequencer? (Maybe Elka is playing around with the idea of sticking an internal sequencer into the beast?) Nevertheless, it is kind of fun to mess around with, and perhaps *you* could find a real use for it.

Next up in the hierarchical memory of the MK88 is the MIDI Patch, composed of 12 slots, each of which can be assigned to send different MIDI messages (eg. Omni Off, Mono On, Program Change, Volume, etc) whenever a Performance Preset is selected. You can select different MIDI Outs within one MIDI Patch, allowing a great deal of flexibility and control from one setup. There is a Split Mute function which cancels the Note On transmission for a selected zone – it can come in really handy if you're using a lot of modules – and a Pause control which allows you to program a pause in the data transmission up to 500 milliseconds. User programmed MIDI messages are also created as part of a MIDI patch.

Finale

ELKA'S MK88/55 CONTROLLER is a powerful, sophisticated beauty, designed for the road (the 88 comes standard with a tough flight case). However, even serious hobbyists who have a few modules, a sequencer, and a drum machine would love the extensive control this baby gives over a MIDI system.

A few of the features on the Elka seemed gimmicky to me – I doubt that professionals would utilize either the loop or the echo functions instead of outboard gear – but for the most part, this keyboard can improve on the rest of your system by adding the kinds of control you've always wanted. The touch on the keyboard is excellent (it'll be hard to go back to those small unweighted plastic keys after you've played the 88), and the memory capability is no less than phenomenal.

Considering the design and control, the price is reasonable (especially for the 55). I would definitely recommend that you check this out. ∎

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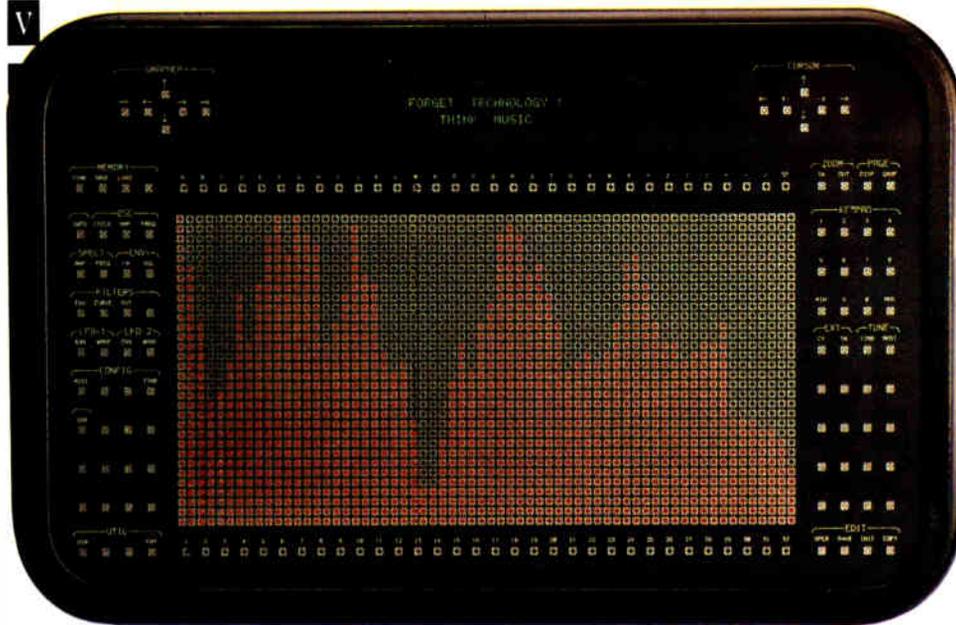
The very impressive capabilities of the first offering from this Canadian company may set a new standard for digital sound creation and user interfaces. *Preview by Bob O'Donnell.*

SAMPLING IS DEAD, long live sampling. Don't believe me, huh? Well, as harsh as the words may sound and as far fetched as the the idea may seem, when the history books are written, I'm willing to venture that the appearance of instruments which successfully incorporate resynthesis and additive synthesis will mark the beginning of the end for our friends, the samplers. It is a bit premature to make these statements, but the emphasis is on the word "bit;" I really don't think it'll be that long. Witness the Acxel.

As it was introduced in the report on the AES convention (see MT December '87), the Acxel is a resynthesizer/additive synthesizer. Actually, that description is a bit rendundant, but it gives you an idea of the instrument's overall design. So what exactly is resynthesis? Glad you asked.

Resynthesis is the process of analyzing a sound and reconfiguring a number of existing sound components, like oscillators and amplifiers, so as to reproduce the sound. In other words, a sound is digitally sampled and then analyzed and recreated with a series of sinewave oscillators (as in additive synthesis) whose pitch and frequency change over time. If you have a sophisticated additive

synthesizer, you could create the sounds yourself without resynthesis, but the absolute beauty of the process is that resynthesis automatically programs the various sound generating elements. It selects the basic frequency and amplitude of the various harmonics (the number of which varies according to how many you have available, though the default amount is 32 per voice on the Acxel) and creates envelopes which vary these levels over time.

The advantage of resynthesis over sampling is that while samplers treat sounds as a complete whole, resynthesis involves breaking a sound down into each of its component parts, or harmonics. The components are all independent and can be adjusted individually, so consequently, you have a great deal more control over the sound – if you so desire. Ideally, a resynthesizer will sound as good as a sampler, but will also provide capabilities that you could only dream about doing with a sampler.

For example, ever wonder how you could get sounds like those violin scrapes and breathy lip attacks in the D50? While they may start out as normal samples, you can't get those components of a sound with

sampling because if you try to sample a violin or a trumpet, you'll have the whole sound. No matter how much editing you do, you'll still hear the fundamental pitch. With resynthesis, you determine the component of the sound producing the pitch (ie. the fundamental and perhaps a few of the other first harmonics) and take them out. The result? Scrapes and lip attacks or whatever else you can imagine.

Another problem overcome by resynthesis has to do with the link between pitch and duration on samplers. Usually, transposing a sampled sound upwards by one octave cuts the length of the sample in half and transposing it downwards by that amount doubles it, but with resynthesis that problem can be easily overcome because pitch is independent of duration. Consequently, a sound's duration can remain constant over the entire range of a keyboard or you can do things like time expansion and compression without pitch change.

Fascinating stuff, this resynthesis, and that's what the Acxel is all about. The name Acxel, by the way, stands for Acoustic Element. In the company's terminology, each harmonic of a sound, which, as I mentioned, is transformed by the resynthesis process into an individual sinewave whose amplitude and frequency vary over time, is referred to as an Acxel. The individual Acxels are then "added" together to form a complete, resynthesized whole. As mentioned above, the Acxel is also an additive synthesizer and if you don't buy the optional Acxelizer, which performs the resynthesis process, then you would simply have very extensive additive synthesis capabilities.

But let's get back to nuts and bolts. The Acxel consists of two basic parts: the Solitary, a large rack-mountable black box which holds the system's plug-in cards, a 3½" floppy drive for storing and loading voice data, 2Meg of RAM, and the various audio, SMPTE, MIDI, CRT terminal, printer and hard disk connectors; and the Grapher, the company's revolutionary interface. Future plans also include making available a high-quality dedicated keyboard controller as an option.

The Grapher is an impressive, touch-sensitive terminal that features an 80-character LCD as well as a 32×64 matrix of red LEDs which can display waveforms, envelopes, relative harmonic levels and a host of other functions. All of the "switches" on the Grapher which surround the rectangular matrix and all of the points on the matrix itself turn on or off with the touch of a finger, making the system very fast. While I still haven't heard the Acxel, I was able to try out the Grapher, and drawing an envelope or a waveform with it is incredibly simple and extremely intuitive. Once you try it and think about it, you realize that it is an ideal interface for working with sound data. It's somewhat similar to a light pen or a graphics tablet, but more sensual. It's also ideally suited for the Acxel because of the speed with which you can adjust a great deal of data. One of the main drawbacks of additive synthesizers has been the vast amount of data required to make up a single voice, but with

the Grapher you can quickly get to that information and quickly adjust it. And, best of all, the Acxel responds to adjustments to the sound in real time according to Technos, and consequently the Grapher can be used as a performance tool. Significant real-time sound shaping has finally arrived. (The actual resynthesis calculations take a bit longer; roughly two seconds for a two-second sample.)

The voice architecture of the Acxel is rather complex, but it does retain some ties to traditional synthesizer voices. The basic sound components, or Acxels, are created by Intelligent Synthesis Cells, or ISCs. Each ISC consists of an Intelligent Digital Oscillator (IDO) and its accompanying Intelligent Pitch Envelope Generator (IPEG), as well as an Intelligent Digital Amplifier (IDA) and its accompanying Intelligent Volume Envelope Generator (IVEG). The reason the word "intelligent" precedes all these components is because they will respond to the artificial intelligence data created by the Acxelizer when it analyzes a sample and intelligently program themselves to the appropriate settings. A normal voice consists of 32 of these ISCs, but the number can be reduced to 16 or raised up to 256 for varying degrees of harmonic resolution. The total number available in a system ranges from 128 to 1024.

In typical additive synthesis or resynthesis the oscillator would produce a sinewave, but each IDO on the Acxel can produce a completely independent, user-programmed waveshape. Consequently, you should be able to produce very complex sounds with a relatively small number of ISCs as well as be able to create noise with a single oscillator. The oscillators (which correspond to individual harmonics) can also be independently detuned for chorusing, which the company refers to as the Harmonic Rainbow effect. The envelopes are also a bit more sophisticated than usual. They can be independently delayed, and can be adjusted by a number of real-time functions. Each envelope offers up to 1024 steps.

But that's not all. After the sounds of the various ISCs have been added or mixed together, the composite signal can be affected by two Digital LFOs (DLFOs), one of which is an Intelligent DLFO, an Intelligent Digital Filter (IDF), an FM processor with an index envelope, a Master IDA and finally, an analog low-pass filter. The IDF can function as any type of filter, including low-pass, high-pass, notch, multi-band and the rather interesting Variable Integer Pass (VIP) Filter, which only affects certain harmonics of the sound. Of course, it can also be programmed and adjusted by the user in real time either with the Grapher or with controllers like mod wheels and foot controllers.

The LFOs also deserve further explanation. In addition to traditional waveforms, each of the LFOs can have a user-defined waveform, and each has its own dedicated amplifier with a multi-stage envelope controlling it for sophisticated modulations. DLFO #1 is also intelligent, which means that it will respond to the

resynthesis process and either recreate a vibrato effect that's in the original sample, or, if an entire musical line with different pitches is the sound source, it will recognize and recreate the changes in pitch by creating a waveform which corresponds to those changes.

So what do you pay for this kind of synthesis power? Well, as you might expect, it's a big chunk of change, but considering that the only other commercially available device which offers resynthesis is the Synclavier, it's not quite that bad. According to Technos, the system currently being produced (called the Pro Studio) features eight modules of 32 ISCs each, the Acxelizer, and eight individual outputs (unfortunately, stereo outputs are not available). You can get

into the system for a little more than half the price of that, but you won't get the Acxelizer, you'll only have four modules and there's only a single XLR output(!).

The Acxel sounds truly impressive on paper, but the bottom line is what it sounds like in the air, and that still remains to be seen. Is the resynthesis process accurate? Does it sound as good as it seems like it should? Stay tuned; the answers to those questions and more will be in these pages in coming months. ∎

PRICES $21,995 for Pro Studio, $11,995 for Starter System
MORE FROM Technos, 55 Delisle, Levis, Quebec, Canada G6V 6K1. Tel: 1-80 (800) 463-5593, or (418) 835-1416.

processing
THE DATA ■

The ability to directly alter MIDI messages was an exercise once confined to programmers and dedicated MIDI hackers, but a variety of dedicated devices bring the power within anyone's reach. *Text by Matt Isaacson.*

WHEN THE FOUNDING fathers of MIDI first contrived to send simple keyboard messages between two synthesizers via a serial digital link, few people fully realized what a can of worms had been opened. In short order, however, many of those naively and eagerly exploring the frontiers of MIDI encountered, without warning or adequate defense, the Law of the Frontier. It took many forms: notes that sometimes failed to appear as scheduled or refused to go away when dismissed; inexplicable delays and system lockups; baffling incompatibilities between different pieces of gear; nightmarish tangles of MIDI cables lying in ambush for the unwary foot, or clamoring for constant repatching; and always, that one bug or missing feature to prevent you from getting precisely what you wanted from your setup. The awful truth was slowly revealed: the industry-wide adoption of a complete, published standard for message protocol did not preclude divergent philosophies of implementation, including those which held that users would be best off to stay within the confines of a single manufacturer's product line, nor did it guarantee that a particular product would implement all applicable parts of the standard. Furthermore, the acknowledgement of a bug or major design oversight did not imply that a fix was soon forthcoming.

Toll Road

GRADUALLY, SOME REALIZED that the average user's inability to do anything about such problems, combined with the slowness of larger manufacturers in remedying the problems which they had created or at least failed to anticipate, gave rise to niche opportunities which smaller companies were perhaps best suited to take advantage of. As increasingly ambitious feature ideas have been conceived and realized, MIDI processors have evolved from mere fix-it boxes to full-fledged system managers, and some of those large companies have also entered this market. Before going into the particulars of some of the products which are now available, let's take a quick look at the common medium with which they all deal - MIDI data.

MIDI data is a single (serial) stream of zeros and ones, or *bits*. The bits appear - one per *bit period* of 32 microseconds - as a presence or absence of current flow during that period in the circuit which consists of the transmitter, the receiver, and the cable that connects them. Eight such bits in succession form a byte, which is the basic unit of information manipulated by most microprocessors. Throw in the *start bit* and *stop bit* which are needed to clearly separate successive bytes from one another on the MIDI cable, and you have a total of ten bit periods - the often-quoted figure of 320 microseconds - to transmit a single MIDI byte.

At this point it may already be apparent why the merging of two MIDI streams, a common feature of many of the products we will be looking at, is no simple task. Simply connecting two MIDI sources together directly with a Y-cable (*not* recommended) results in dueling currents which the receiver cannot correctly interpret, just as you might have trouble understanding clearly when both of your lovers are shouting at *you* at the same time.

Nor is it so simple as sending individual bytes through one at a time. Your typical MIDI message is anywhere from one to three bytes in length depending upon its type (some are much longer), and the ordering is absolutely critical - the bytes of a MIDI message cannot be interleaved with those of another message without garbling both messages. A MIDI merger must directly examine each incoming message to ascertain what type of message it is, and thus know how many bytes are in the complete message. When messages arrive on more than one merge input at a time, only one message is sent immediately through to the merge output. The other messages must be assembled and stored in memory, or *buffered*, and are transmitted to the merge output only when the first message has gone completely through.

Of course, having gone as far as to assemble the bytes of a complete MIDI message in a microprocessor's memory, it's only a small step to begin tampering with the contents of the message a little before sending it back out. Or perhaps choosing among a number of different outputs to send it to. Or even, for that matter, deciding not to send it out at all. Thus - MIDI processors. The rules used by these devices to manipulate MIDI messages range from very simple to fairly complex, but all true MIDI *processors* have in common the buffering and inspection of MIDI messages by a microprocessor which

> "*The rules used to manipulate MIDI messages range from very simple to fairly complex, but all true MIDI processors have in common the buffering and inspection of MIDI messages by a microprocessor.*"

is capable of peforming some software-controlled set of operations on them, with decisions based on the contents of each message.

Contrast this with the case of the MIDI Thru box. A Thru box contains no processor, no memory and no intelligence. It deals with MIDI as neither messages nor as bytes, but simply as the serial bit stream described above. For each output which a Thru box provides, it contains a driver circuit whose control input is directly connected *in hardware* to the incoming MIDI signal. Each such circuit generates an exact and *immediate* copy of the input, but the Thru box has no ability to perform intelligent operations on the messages passing through it, such as merging or splitting of data streams. This is why Thru boxes are always inexpensive and usually have but one input for any number of outputs. Those with multiple inputs always include some sort of switching which limits

any output to being driven by only one of the inputs at any time. Despite these limitations, the Thru box, whether in pure form or as part of a more sophisticated MIDI processor, deserves place in any MIDI setup of a few modules or more. It provides a central broadcast point for connecting all slave modules, eliminating the need to daisy-chain the slaves (which is a cumbersome wiring arrangement at best, and at worst introduces signal degradation which can result in unreliable reception near the end of a long chain). The ability to flip a switch to select among two or more MIDI controllers, however primitive, is far more efficient than repatching cables to achieve the same end (eg. shifting from main keyboard to strap-on remote keyboard, or turning the slaves over to sequencer control for a spell).

Thru Traffic Merge Left

ALL IN ALL, however, MIDI Thru boxes and their brethren MIDI switchers cannot do anything which could not be achieved
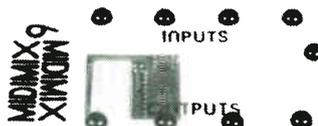
by daisy-chaining and cable repatching. But there are many situations in which this is not adequate. Consider the simple case of using MIDI drum pads to record rhythms into a drum machine which in turn is driving a sampler. The sampler is actually producing the sounds, with the drum machine acting as a sequencer for it, a use for which the drum machine was not really designed (although using things for other than their originally intended purpose is pretty much de rigeur in the MIDI world). The MIDI output from the pads must go to the MIDI input of the drum machine in order to record patterns, and must also go to the MIDI input of the sampler in order for the notes played on the pads to be audible. This could be done by daisy-chaining – the drum box MIDI Thru drives the sampler's MIDI In with messages coming from the pads. However, in order to hear the recorded patterns, the sampler must get its MIDI from the MIDI Out of the drum box. If the MIDI connections are rearranged accordingly, the MIDI pads can no longer play the sampler, because the pad messages arriving at the MIDI In of the drum machine are not reproduced at its MIDI Out (remember, it wasn't designed for this purpose). As a result, you can hear either what you are playing on the pads or what is being played back by the drum box, but not both at the same time – a difficult setup for doing rhythm overdubs, which no
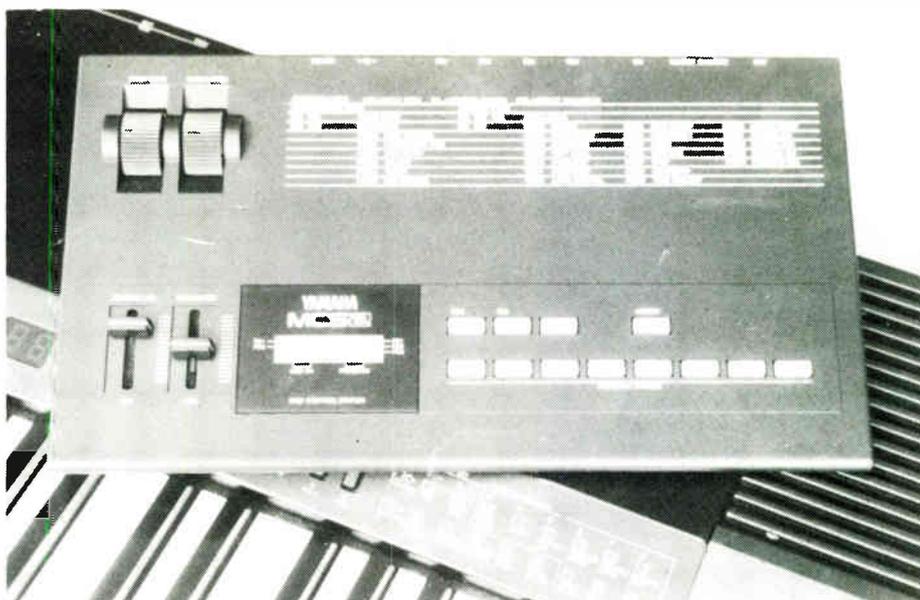
number of switch-boxes can improve. Enter the MIDI merger: it receives live pad messages by way of the drum box MIDI Thru on one of its inputs, and the playback output of the drum box on its other input. The merged message streams are sent to the sampler's MIDI In. This arrangement lets you record from the pads and hear both your live notes and any previously recorded notes at the same time, with no repatching necessary.

Nowadays, most sequencers of any respectability provide a MIDI echo option. When enabled, it causes MIDI messages received at the sequencer's MIDI In to be merged internally to its MIDI Out along with the messages generated by sequence playback, which eliminates the need for using an external merge box in order to hear live and recorded parts simultaneously. However, if two musicians on separate MIDI instruments want to play together and record their performance into this sequencer, or even if a single keyboard player wants to play on two keyboards at once and record that, a merge box will be needed. Precious few sequencers or MIDI controllers are available which support that sort of merging on their own. (A case in point: the Roland Octapad provides a merge input intended to allow multiple Octapads to be cascaded and run down a single MIDI cable. Use of this merge input with a MIDI keyboard instead of an Octapad causes flaky behavior and error messages from the Octapad, whose merge capability is not designed to support the greater demands of keyboard-generated MIDI streams).

No Status F0A on Channel 3

THE ABOVE EXAMPLES illustrate some uses of the merge function which is provided by most MIDI processors. One such unit is the MIDIMerge Plus from 360 Systems. It provides two MIDI inputs and delivers a merged output stream to a pair

of MIDI outputs, both of which produce identical data. In addition to the merge capability, the MIDIMerge Plus provides another function which could be helpful in the above example, namely that of selective message filtering.

Selective MIDI filtering, usually with separate switches for note events, pitch-bend, aftertouch, program changes, controllers, system exclusive, system common and system real-time, is, perhaps more than merging, a standard feature of MIDI processors, owing to the large number of problems which it can solve. Let's look at some examples. Our drum machine, in addition to sending out the recorded note messages during playback, will also send MIDI real-time messages (start, stop, clock) on the same line, enabling it to serve as the master timebase for other sequencers. Which is fine, except that in our example, the messages are going to a sampler, which has no use for them. The sampler does not outwardly respond to them at all, but still must deal with them internally, at least to the point of identifying them as messages which should be ignored – an activity which uses up some of the time available to the sampler's internal microprocessor. At a tempo of 120bpm, the sampler will have to process, and decide to ignore, 48 clock messages each second. Ideally, this should not pose a major drain on the sampler's ability to stay caught up with its real job of responding to note messages and playing sounds, but reality is often less than ideal. The MIDIMerge Plus can take this job off the sampler's hands by filtering out these messages before they can get to the sampler. When it receives and identifies a MIDI clock message on one of its inputs, it checks its settings to see whether it is supposed to forward real-time messages from that input to the merge output (the filter settings can be different for the two merge inputs). If not, it simply swallows ►

► the clock message – the sampler is left with nothing to do but respond to the note messages which *are* passed along to it.

The converse use of filtering applies to the case in which rhythms are being played by a drum box which has its own patterns recorded internally, but gets its clock from another sequencer via the sequencer's MIDI Out. The same MIDI Out stream, unfortunately, also contains several channels of playback data intended for other synth modules. This data would certainly contain note messages for each of those channels, but might also include pitch-bend and aftertouch messages for one or more of those channels. These messages, which relate the incremental positions of "continuous" controllers, typically emerge from their source in dense bursts, since they are attempting to

sequencer, and hence must wade through each others' piles of pitch-bend and aftertouch? Pile up several channels worth on one MIDI cable, and it could get to be too much for some of them. To address this problem, the Voyce LX9 incorporates the *routing* function known as *channel splitting* as an integral part of its design. It provides four separate MIDI outputs which are "hard-wired" such that all MIDI data on channels 1-2 goes out through output 1, with outputs 2, 3, and 4 dedicated to MIDI channels 3-4, 5-6, and 7-8-9 respectively. Used with only one slave on each output, no slave has to contend with any MIDI data not intended for it. In a few cases involving advanced Mode 4 applications, such an arrangement might prove overly restrictive. However, the one-slave-per-output setup has the extra advantage that each of

sounds like a lot of work, but the processor does all the hard stuff – you just hold the button, which is much quicker and simpler than any other method you might be able to use to find and get rid of the stuck note.

Detour

LONG AGO, (actually not *that* long ago) Yamaha gave us the QX1 sequencer. Perhaps partly in an attempt to minimize memory needs, and partly in keeping with the rather narrowly-envisioned use of the QX1 with a single-channel TX816 FM module on each of its eight MIDI outputs, this sequencer records MIDI information without the channel information. Channel info is later pasted onto MIDI messages during playback, depending upon which MIDI output each message is sent through, although with but one channel allowed per MIDI output, there is little reason not to simply keep all modules on channel 1. No doubt stemming from this same philosophy, the DX7 came into existence with no ability to transmit its MIDI messages on any channel *but* channel 1. Despite widespread complaints, this major limitation in a keyboard otherwise very workable as a master controller – and perhaps the most widely-used velocity/pressure-sensing keyboard around – has never been corrected by Yamaha (except that they didn't make the same mistake in the DX7II). And thus it is that the ability to re-channelize MIDI messages is another common feature of MIDI processors. The processor, in effect, performs transplant surgery on the first byte of a MIDI message, where the channel number resides as one of the two digits in the byte. A new channel number is "sewn in" in place of the existing channel number prior to re-transmission of the message via one of the processor's outputs. This may take the form of channel offset, in which a fixed number is added to the MIDI channel number of incoming messages, or reassignment, in which a specific channel number is used in place of the original, regardless of what the original channel number was. (The "channel bump" feature of some processors is a computerese name for channel offsetting by a value of 1, which is adequate for two-channel setups.)

In its simplest use, channel shifting enables one to build a MIDI system with slave devices on two or more channels and control them from a single keyboard or other MIDI controller by simply shifting its output channel to that of the desired slave. This is essential in order to do sequencing work efficiently on a multi-channel setup. However, there are many interesting extensions to the basic use. One which is found on a number of processors (such as the Voyce LX4/LX9 and the Digital Music Corp MX8) is the ability to divide the keyboard into two or more zones, each of which plays on a different channel. From

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"By performing 'transplant surgery' similar to that involved in channel shifting, processors like the Voyce LX9 are able to convert aftertouch messages to equivalent pitch-bend messages."

"smoothly" describe the sweeping movements of pitch wheels, etc, in many small steps. While the drum box can be prevented from responding to the incoming note messages by assigning it to a MIDI channel which is not used in the sequence, and normally would not respond to pitch-bend and aftertouch in any case, it nevertheless must inspect every message it receives, including the thick gobs of continuous controller info, in order to determine that it should ignore these messages. If the data gets thick enough, the drum box may begin to falter under the load and lose its perfect timing. In really extreme cases, especially with older gear, the drum machine's MIDI input buffer may literally overflow, causing missed clock messages and serious loss of sync (if not worse). A JL Cooper MIDI Blender connected between the sequencer and the drum box can solve this problem by filtering out all messages except MIDI real-time (in this case, the merge capability of the MIDI Blender is not actually being used, but – nothing says that you always *have* to use it).

Yet another scenario is the one in which the rhythm patterns are stored in the sequencer, and the drum machine is used as a slave sound module (often done because many drum machines do not record velocity information internally). In this case, note messages are passed to the drum box, but MIDI real-time messages are not, in order to prevent the drum box from starting up and playing its own internal patterns in response to them.

Right Lane Must Exit

OUR DRUM BOX is taken care of, but what about all of those synths which must still receive performance data from the

the slaves can be used in Omni mode, with no need to make sure that they are set to their proper channels. Used as a controller interface, the LX9 does not *generate* data on channels 10-16, but it does allow sequencer data on these additional channels to be merged into the data streams going to outputs 2, 3 and 4.

Stop Ahead

A HANDY FEATURE of many (but not all) MIDI processors is the system reset function, or as JL Cooper calls it, the panic button. This is a life-saver (or at least a face-saver) on those occasions when you lift up all fingers from the keyboard, or stop the sequencer, and discover that somewhere in the system, one or more synth voices have not gotten the message that their time is up (the dreaded "stuck notes"). The usual form of system reset is a button which causes the transmission of the All-Notes-Off MIDI message on all MIDI channels in use on each output. This takes but a fraction of a second, but won't always work, since most synths are in fact not trained to respond to this message. Virtually all Roland equipment is, though, so the attempt is made. If the user indicates, by continuing to hold down the reset button, that the stuck note is still present, the processor proceeds to execute the more unwieldy task of transmitting individual note-off messages for *every* note number on *every* MIDI channel, on each of its outputs. This is 128×16 messages times two bytes per message (or three if running status is not used), which may take up to two seconds to transmit, so typically the process is halted as soon as you hear the stuck note go away and release the reset button. Transmitting all of those note-off messages

the processor's view this means inspecting the note number of a received note message (naturally this can only be done with note-on/off messages) and altering its MIDI channel depending upon which of the user-specified note ranges it falls into. This idea will be familiar to users of certain dedicated ($$$) controller keyboards – having it in a MIDI processor means the same trick can now be done with *any* MIDI keyboard (even a DX7!).

Alternatively, one could play back a sequence through a zone map in order to split existing right-hand and left-hand lines apart and send each to a different slave (or re-record them on separate channels, in the case of a sequencer which cannot perform such a split on its own). Another variation is the creation of layers. In this case, a single incoming note message is cloned one or more times. Each clone, and perhaps the original as well, is given a different MIDI channel number before being transmitted, thus allowing one to play multiple slave units from a single key or MIDI pad (or . . .). A similar effect could be achieved without a processor by simply putting several slaves on the same MIDI channel, but this would lack the convenience and swiftness of processor control. To *unlayer*, you'd have to go around to each of those slaves and put them on different channels again. With a processor, you simply call up a different processing patch and *pouf!* your layer is

unlayered. The Voyce processors even allow each of their multiple keyboard zones to have a different layering arrangement (try doing *that* with MIDI cables alone!). The MX8 offers a velocity switch function, in which the channel shifting is done only on notes above a specified velocity threshold. This allows your accented notes to come from a different slave than the rest of your notes.

Other simple manipulations: many processors provide a keyboard-transpose ability, in which the note numbers of note messages can be shifted upwards or downwards by a user-specified amount. Among other things, this allows access to the extreme pitch ranges of a sound which are not accessible to the average five-octave keyboard. Transpose ability is especially useful when combined with zone-mapping, as it allows you to have precisely the range of notes you want in each zone of the keyboard, without having to resort to patch programming on each of the individual slaves to get them there – in fact, the same patch can be used in

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different parts of the keyboard at different times, which could be a big performance aid. By performing "transplant surgery" similar to that involved in channel shifting, the Voyce LX9 is also able to convert aftertouch messages to equivalent pitch-bend messages. This allows those of you who can't quite get comfortable with pitch wheels (eg. converted guitarists?) to do your pitch-bending via key pressure instead.

Processor/Patchbays

EARLIER, THE USEFULNESS of MIDI Thru boxes and switchers was discussed. It should come as little surprise to learn that some manufacturers have seen fit to integrate these capabilities into their MIDI processors. The patching capabilities provided by such units go beyond that of the typical MIDI switch/Thru box, in that the switching is now done via internal electronics under microprocessor control, and is therefore presettable and remote-controllable. Two such units are the aforementioned MX8 and the JL Cooper MSB Plus. They are structured very similarly. There are multiple MIDI inputs (six on the MX8, eight on the MSB Plus), eight MIDI outputs, and two assignable processors (in reality there is only one actual *micro*processor, but it's fast enough at what it does to be able to pose as two completely separate MIDI processors). In addition, there is an electronic switching *matrix* which is capable of connecting any input to any output. It's possible to use only this matrix and sidestep the processors, building up a catalog of useful patching arrangements which can be stored and instantly recalled. The processor/patchbay, used at this level, can already expect a place in many studio and stage MIDI setups. However, it's strictly a

hardware device in this mode. The internal microprocessor simply controls the switches for you, and never gets to touch the MIDI data. As a result, no merging is possible – you can patch any number of outputs to each input, but no output can be patched to more than one input at any time. (A positive side effect of this, as with bonehead Thru boxes, is that there is but a negligible time delay as a result of routing MIDI signals through the matrix.)

The MIDI processors are like software-driven "black boxes" inserted between inputs and outputs. Each can be independently connected to one of the MIDI inputs, and each processor's output is a source to which any number of MIDI outputs can be connected via the switching matrix. In these systems, merging is set up by assigning MIDI outputs to the "merge" source rather than to one of the processor outputs (or one of the MIDI inputs). In other words, the internal MIDI processors independently provide all of their designed-in processing functions regardless of whether they are being used to merge inputs. When the merging option is chosen, the two processors have their outputs merged together internally and provided to the switching matrix as a MIDI source to which outputs can be connected. Doing so, in the case of the MSB Plus, means that the outputs from the two processors are no longer separately assignable to other MIDI outputs, although the MX8 retains the ability to assign one of the processor outputs separately from the merge. Despite having six or eight MIDI inputs, these systems can merge only two inputs at any time. However, the choice of those two inputs can be made quickly under preset control.

Construction Ahead

SO FAR WE'VE looked at a number of ways in which MIDI processors can serve as facilitators and system problem-solvers. Next month, we'll delve into some of the more stratospheric types of processing which are available, and how they can boost a MIDI processor fully into the realm of creative tools. ∎

MILES
o' production

Producer and bassist Marcus Miller incorporates technology and a unique approach to the studio into all of his successful R&B, jazz and pop recordings, including some serious funk work with trumpet great Miles Davis. *Interview by Lars Lofas and Nick Armington.*

A BLIZZARD IS raging outside the recording studio, the first of the season here in New York City, and it's only 9:15 in the morning. Marcus Miller, who's been variously described as a "renaissance man," "the boy wonder," "the next Quincy Jones," and "the world's smoothest bassist" is ready to start another day of producing and playing.

Today he's working on a track for Roberta Flack's upcoming album. In recent months, Marcus Miller has also managed to produce David Sanborn's latest LP (still untitled at press time), the soundtrack for the movie *Siesta* (with Miles Davis), and *The Jamaica Boys*, a collaboration album with drummer Lenny White and vocalist Mark Stevens which Miller played on and co-produced.

Born in the Bedford-Stuyvesant neighborhood of Brooklyn, New York,

Marcus' family later moved to an area of Queens known as Jamaica. There, he began to listen to the music which influenced him – groups like Sly and The Family Stone, Kool and The Gang, The Sylvers and The Jackson Five. Later, as Miller got more into jazz, Jaco Pastorius and Paul Chambers of the Miles Davis Band provided inspiration to the budding musician, who at the time was actually studying the clarinet in school.

Though he's laid the groove on dozens of landmark albums, for artists as diversified as Elton John and Dionne Warwick, Marcus' musical roots are in the bass clarinet. "I didn't actually touch a bass guitar until I was about 12 or 13 years old, but then I picked it up when I was attending the High School of Music and Art in Manhattan. And before long, I was playing sessions, and my parents were driving me to gigs all over the place. Now

look what's happened . . ."

Considering that Marcus Miller is just 28 years old, and has been a professional in the music business for a little over ten years, it's still surprising to realize just how many musical legends he's already worked with.

His discography is a virtual Who's Who in the R&B arena. He's worked on albums for Miles Davis, David Sanborn, Bob James, Scritti Politti, Roberta Flack, Jennifer Holliday, McCoy Tyner, Luther Vandross, Aretha Franklin, Spyro Gyra and Grover Washington Jr, just to name a few. He's also managed to do a good chunk of songwriting, and many of his tunes have been hits for Franklin, Vandross and Warwick, among others. Snuck in are two of his own solo albums.

Miller is a little shy around praise. "I've been really lucky," he recalls, "to have had

the opportunities that I did so early in my career. When I was growing up, there were a dozen guys in my neighborhood who played the bass the same way I did, and most of them were a lot better than me. But most of them got into other things, and I just kept with it."

The intensity that Miller puts into his projects combines a wealth of experiences and influences ranging from jazz to R&B to fusion, though he doesn't like being slotted into one style. "Each tape I make is different, combining different experiences, different cultures. I experiment a great deal with sounds. Because I play quite a few instruments, I can try different textures in different places. I played the bass clarinet for a long time when I was growing up, so you'll hear that in quite a few tracks."

Indeed, he may have gotten the "renaissance man" label from the fact that he plays so many instruments well. On Miles Davis' Tutu, as well as on his own solo albums, Miller played practically everything, including drums/drum machine, bass, keyboards, clarinet/sax and guitar. "That was just the way it worked out, actually, and Miles really liked it. He always knows exactly what he wants, and on Tutu, I played all the parts because I knew what he wanted, too."

The collaboration between Davis and Miller continued through the recording of Siesta, which is much more sparsely arranged than the Tutu album. It's also a much more electronic album. Says Miller, "Siesta was a fun album to make. For one thing, I was more used to working with Miles, and I also had some freedom to try some radical things. He wanted to update his sound with technology.

"It's hard to keep Miles in front of a microphone. We had to have a good sounding room to work in because he doesn't stay still. He likes to move around while he's playing, so we put PZM pressure zone mics on the walls at Clinton Studios to capture the room sound. On a lot of those Tutu and Siesta tracks, you're hearing that room sound, because Miles' direct mic was turned off.

"At other times, we'd play the leads together. I'd show him a part on the bass clarinet, and he'd take off with it on the trumpet. So I was surprised when he asked me to play along with him. But since I'd played everything else, I had some ideas on the lead parts, too, and I did them, and it all ended up sounding really hip. I'd rather be playing than sitting behind the board as a producer anyway."

MILLER LIKES TO draw an analogy between the way he produces and painting. "It's cool to create a song from different parts - it's like painting a picture. You have to know what that picture's going to look like

when it's finished, but you paint it color by color. Each piece has to fit into the whole. (Laughs) And the programming part is like mixing the paint - it's messy, but you're glad when you see the results.

"In the same way, I know what things should sound like on a record most of the time. Beyond the basics, I really like to try new things wherever I can, especially if they break convention. Sometimes, I'll be in the studio, and say to the engineer 'Put the tape up' so that I can try to fit a sound into the song I'm working on. Usually, I have a pretty good idea of what's needed.

"Musical styles need space to breathe. I mean, some jazz players were brought up with jazz and try to play with a rock beat, and rock players are always trying jazz feels. I was brought up listening to so many different styles that they're all a part of me

now. It all goes back to soul. The rhythm is always there, along with the blues."

Miller admits, however, that from time to time he has to force himself to remember that he's the producer as well as a musician while he's in the middle of recording. "When I'm working on a date as a producer, I have to separate myself out as a player, play my part, and then take a break to get my head together. Otherwise, I'd still be acting as a musician. As a producer, I have to make sure that the part works.

"When I did the Jamaica Boys album, I had a lot of fun because I was really getting back to my roots in R&B - we liked to call it 'R&B with a Third World influence' - even though all the tracks are quite different. It's a real hip record, though, and Lenny, Mark and I all had a part in the production, along with Bernard Wright, who played keys on the album. At times, I had the responsibility of the deciding vote, which is necessary when you've got a bunch of creative people all feeling creative at the same time."

The Jamaica Boys project also gave Miller the chance to experiment with live tracking, something he hadn't done for a while. "We tried to combine the spontaneous way that bands used to play with the technology of today's music. We'd spend a couple of sessions just programming, doing these really tedious sequencer parts, but then we'd play on top of the machines, and get up this jam and see what happened.

"When you work that way, you have to be prepared to throw things away - in our case, it was a lot of things! (Laughs) It takes a while to build an album that way, because you're always trying new things, and making sure that the other people in the band feel good about what they're playing too."

Marcus does a lot of experimenting in his

well-equipped home studio, which is the breeding ground for many of his creative thoughts and concepts. Because he lives in Manhattan, he's never very far away from the big studios anyway, but working at home gives him the chance to try out new ideas in peace.

"I have an Otari 5050B Mark III eight-track recorder and a Sound Workshop board; a bunch of outboard gear including a Yamaha REV7 reverb unit, an AMS 1580 Sampling Digital Delay, a TC Electronics 2290 Delay, a Lexicon PCM 42 DDL and some other things, like equalizers and gates. Then I also have a Yamaha DX7, an older Jupiter 8, which is a great synth, and my guitars and basses, which are made for me by Roger Sadowsky here in the city.

"I work at home a lot. In fact, at times, I've even threatened to transfer something

I've done at home on my eight-track directly to the 24-track in the studio. But I'm still afraid to do that, so instead I might sit down and transcribe the tracks one at a time so that what we put down in the studio is note-for-note identical to what I did at home.

"Someday, I'll probably end up getting a Synclavier or something like it for home - but first I need to buy a car. Seriously, I'm really impressed by what those things can do - they almost make you sound too good. I also think that the prices have to come way down, so in a way, I guess I'm just waiting for a Synclavier that costs less than a thousand dollars. The way things are going, we'll probably see one in a few years."

Although he'd probably be loath to admit it, Marcus Miller is a true technologist. He's been known to spend time on airplanes reading equipment manuals and lock himself up with the latest synthesizer, but as soon as he's conquered a piece of technology, he likes to move on to something new. "On Siesta, we did some really wild things with sampling. A couple of years ago, I took the time to sit down with all these synthesizer manuals, and learn about programming, both FM and analog."

He's also very much into trying out new pieces of outboard gear and keyboards - really everything that's in a studio. "I must admit, I'm drawn to studios with a lot of outboard. I've gotten really into using the AMS and TC Electronic Sampling Delays. I like to pick up little pieces of this and that from the tape and play with them.

"I'll use whatever's available, though. Sometimes, I like keeping things simple, using a really cheap reverb or a stompbox. Other times, I fool around with state of the art stuff like the new Sony Digital system. ▶

MUSIC

"It's hard to keep Miles in front of a microphone - we had to have a good sounding room to work in because he doesn't stay still, and put PZM pressure zone mics on the walls to capture the room sound."

▶ Most of all, I like the challenge of making something bad sound good. I'll take a drum kit that's falling apart, put it in a great room, and make it sound good, even if the cymbals sound like pizza trays. I do whatever it takes to make a track shine."

IT'S NOT SURPRISING that Marcus Miller pays a lot of attention to the feel of the studios he works in. It's all part of the sound that's fast becoming recognizable as his own creation. "I like using the natural acoustics of a room whenever I can. That's so important, and so many people are turning away from it, thinking they can simulate a room with electronics or other tricks. But a good room can set the mood or make the track. I think it makes for a better performance.

"I love a lot of the downtown studios in New York, like Sorcerer Sound and RPM. They're out of the way and very private, and I feel very comfortable doing a lot of things there. Other times, I find myself working at the really big studios in town, like Power Station, Clinton and Skyline. Those 60-input boards just do it in the mix.

"When I walk into a new studio for the first time, I'll sit down and play the drums so I can hear how they sound. The drum sound is the root of the music, so you have to have a good sound. That's why a room has to have a great natural sound. Without it, you may as well pack it in and go home, because nothing else will click if the drums don't."

Like many talented people, Miller relies on a small, dedicated circle of friends who help him create his magic on a daily basis. "The people I work with regularly are very important to me, because they free me up to do what I do best, which is create music.

"I depend on my production coordinator, Bibi Greene, for a lot of things. She and my manager, Ramon Hervey, keep me going and focused. Bibi always finds me the right rooms to work in at the right price. She takes care of everything, because she knows just what I'm looking for in a studio. I'm very fortunate to have several people in my life who are the same way.

"My friend Jason Miles is also my synthesizer programmer and all-round technology expert – the guy's a genius when it comes to electronics. He's always bringing in something new and different, keeping me one step ahead of the pack, and best of all – (laughs) he figures everything out so I don't have to!

"When we're doing a project, Jason brings a mountain of equipment in. I think he's got one of everything ever made. He spends a lot of his day creating unbelievable sounds and patches. Then I come in and play the best of them – I tell you, it's a great way to work. Jason is patient with me, and at times I think he's reading my mind.

"I work with engineers in the same way. I'm not very detail-oriented when it comes to remembering what I used on this session or that session, but I always know just what's missing, or what's needed, so I've learned to communicate with my engineers, and say, for example, that maybe the curve of the mic is off at 3kHz, or things like that."

Most producers prefer to hold closed, private sessions. But Miller recognizes that the opinions of others can make a difference even during the creative process, so he likes to invite a few non-musician friends in to hang out while he's recording. "They're my secret weapon. I like to bring friends into the control room when I'm working on a project, and ask them what they think.

"I don't have an entourage like Eddie Murphy does; it's just one or two people I can really trust. Some producers need to feel encouragement, they need to feel supported by praise. But I can watch my visitors out of the corner of my eye while I'm working, and get a good idea of how the session's going. I don't really need anything else.

"When you have people in the room, you start to hear things the way they hear them, not the way you hear them. That's really important. I don't think that too many musicians are ever 100% happy with their final products. Whenever I used to play finished tracks for people – especially record company executives – I'd always be saying 'I should have made it faster' or 'The bass should be less up front.'

"What was happening was that I was hearing the record the way they heard it, which is completely different from the way you hear it in the studio. I hope that people understand what I'm talking about, because I'm only now getting to the point where I can listen more objectively to what I'm producing, for myself and for other people."

Miller considers himself lucky to have worked with so many major acts, many of whom have worked with him on more than one album project. "In fact, I think a big part of my success is that I've been fortunate to grow up around a group of incredibly talented people, and I'm still working with them today.

"It's been a really logical progression. At first, I was the bass player, and then I started writing songs for my friends. Before long, I was arranging my songs, and then the final step was to have control over how those songs turned out by becoming the producer.

"I've seen myself growing in the last few years because I've learned to listen to people around me and work with them more and more. My arrangements are getting fuller, and since a lot of the people I've worked with think very differently than I do, a lot of what they've said to me has rubbed off.

"In a way, I hope things continue to go as well as they have thus far. I'd like to work with Miles for as long as he'll let me. All the other projects I'm working on mean so much to me too. These people are all my friends, and I couldn't ask for much more than that, being able to work with my friends and feel so glad to come to work each day. It doesn't get much better than that!" ■

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Theme and Variations
THE NAMM REPORT

The recent convention in Anaheim had a surprisingly small amount of innovative new ideas, but there were a number of interesting variations on existing products. *Report by Bob O'Donnell, Rick Davies, Deborah Parisi, Amy Ziffer and Michael McFall.*

AND SO IT WAS. Winter NAMM (National Association of Music Merchants) '88, the musical product industry's trade convention, has come and gone, leaving in its wake another six months worth of products about which we can only dream and wait. The Anaheim Convention Center once again served as the site for the semi-annual gathering of instrument manufacturers, music dealers, press and other industry personnel, but this year's record-breaking show spilled over into both the nearby Anaheim Marriott and Hilton Hotels as well. The show ran for three days, from January 16-18, but there really wasn't enough time to see all that there was to see. Well over 500 manufacturers were on hand to display their wares, and though a good portion of them were selling pianos, organs, guitars, band instruments and the like to music retailers, the hi-tech manufacturers accounted for more than a fair percentage of that number.

While no one actually complained that the show was a disappointing one, many were surprised that there weren't more really *new* products. There were quite a few variations on existing product ideas – many of which were extremely nice – but not much that could really be counted as innovative and new. Perhaps I'm overstating the case a bit, but there wasn't quite the same buzz to this year's show as there was at the one last year. (To be fair, last year's Winter Show was a rather incredible one – the D50, DX7II, FZI and more debuted there – so the anticipation that built up prior to this show was unreasonably high.)

Many of the variations, however, look to be great products. In addition to providing more power for less money and more efficient packaging, some of these new products take existing ideas and technologies a step further. It's impossible to cover everything that was there, but anything of note that doesn't make it into the following lines will show up in MT soon. Our apologies in advance to anyone we might have overlooked.

Enough analyzing, it's time to dig in.

The Sound Makers

THE HIGHLIGHT OF the show, at least in my mind, was the all-new line of **Korg** products. The MI Music Workstation Keyboard, the QI MIDI Workstation Sequencer, the SI Production Workstation, the P3 Piano Module and the C2 MIDI Mixing Console all have very impressive specs, not to mention very slick-looking designs (I'm a sucker for rounded corners and uncluttered front panels). Unfortunately, only the MI and P3 were working, so I'm taking the risk of enticing you with vaporware; but the little I heard sounded promising.

The MI was one of two products at the show (Roland's new D20 being the other) that had everything you could want in a MIDI studio all in a single box: synth, sequencer, drum machine and built-in signal processing (ie. reverb and effects). The instrument's sound generation is somewhat similar to the Kurzweil approach in that it has 2MegaWord of 16-bit PCM samples in ROM including 80 multi-sampled acoustic sounds, 30 DWGS waveforms and four drum kits with up to 30 sounds each. The specs on this one require more room to list than there's space for here, but do check out next month's MT for an in-brief preview of all it can do.

Equally impressive, if not more so, is the SI Production Workstation which consists of a sophisticated SMPTE-based hardware sequencer with a 1.4 Megabyte capacity 3½" disk drive, 16-bit stereo sampler and drum machine with one MegaWord of 16-bit ROM-based sounds. The standard amount of RAM for the sampler portion is 512K but it can be expanded up to 2Meg, which would allow 12 seconds of stereo sampling at 44.1K or 24 seconds of mono. The sampler's processing capabilities include multiple loop points and a variable digital amplifier, but no filtering. Again, we have to wait to next month to give you *all* the highlights – but it should be worth the wait.

The P3 Piano module offers 16-voice polyphony, a choice of two 16-bit sampled piano sounds and the option of adding up to eight more sampled sounds via high-density (2Meg) ROM cards – tentatively priced at $100 each. Best of all, the oddly-shaped unit is multitimbral and predicted to be in the $500-$700 price range.

The rack-mountable C2 MIDI Mixing Console offers eight tracks of MIDI-controlled automation over level, pan, two effects sends, EQ and master volume and effects return. The unit doesn't have real faders, but it can store up to 64 settings with programmable crossfade and mutes. Suggested retail should be around $1200.

None of the new Korg Professional Performance Series are scheduled to be available until at least May, so don't go running down to your Korg dealer yet. If all these products do in fact happen, they'll go a

Yamaha's new DXII is basically a TX8IZ with a keyboard and a few additional editing features.

long way toward establishing a completely new reputation for Korg products and the company in general.

One instrument that may start that change is their new 707 performance synth ($899), which is available now. It basically consists of a DS8 repackaged into a smaller, sleeker, less expensive package that's available in four different colors. The new SQD8 sequencer with a built-in Quick disk drive should also help.

A good deal of more comprehensive repackaging and reformulating was to be found in the ever-expanding **Roland** booth. The company unveiled no less than three single-space rack-mountable synth modules which utilize their existing L/A, sampling and S/AS technologies. The D110 ($995), my personal favorite, is basically a more professional version of the multitimbral MT32 (which includes eight independent Synth Parts and a Rhythm Part). This new L/A synth adds six individual outputs, 128 more synth partials (256 total) – including all the ones in the D50, battery-backed-up memory, a memory card slot, new drum sounds, front panel programmability and quieter operation.

The S330 ($2295) is basically half of an S550, literally. In addition to being half its size at a single rack space, it has half the memory (750K) – which is equivalent to the amount in the S50. Like the 550, however, it has digital filtering (TVFs), eight individual outs (RCAs), can be connected to an external CRT and can be controlled with a mouse. It also has a 3½" disk drive (yes, in one rack space) and is completely compatible with S50 sounds and optional programs.

The P330 ($1395) is a single space digital piano module using the exact same S/AS technology (except for a Mid EQ control) as the popular MKS20, but at a lower price.

Roland also showed a keyboard version of the D110, the D10 ($1395) which has a 61-key velocity-sensitive keyboard and all the capabilities of the rack unit but only two outputs. The D20 ($1795) has a similar configuration but adds an onboard 16,000 note, nine-track pattern sequencer and a 3½" disk drive for storing sounds, rhythm patterns and sequences – most definitely an instrument to watch out for. The companion PG10 Programmer ($399) will work with the D10, D20 and D110.

The biggest news from **Yamaha** at this show didn't concern new products but the fact that the company had purchased the assets of **Sequential**. Rumors to this regard had been floating about for a while, but the word became official in Anaheim. Apparently the company will release the Prophet 3000 ($4500) 16-bit stereo sampler – a more finished version of which was being shown in a hotel suite – and may continue to produce the Studio 440 sampling drum machine/ sequencer and the Prophet VS Vector Synthesizer.

The company's own TX16W Digital Wave Filtering Sampler ($2895) made its first NAMM show appearance, as did the DX11 ($995), which combines a TX81Z with a velocity and pressure-sensitive keyboard. The

The Korg P3 Piano Module is part of the company's impressive new Professional Performance Series. It features 16-voice multitimbral operation and room for additional PCM ROM cards.

TX1P ($895) is a new single-space sampled piano module with five different voices and three on-board effects: chorus, transposed delay and chord play. The module uses AWM (Advanced Wave Memory) technology, which first appeared in Yamaha's high-end HX organs.

While we're on the subject of sampling, one new product that could prove to be a contender in the higher price bracket is the **Dynacord** ADS Advanced Digital Sampler ($3995). The ADS is a 16-bit stereo sampler that features many of the complex modulation controls normally found on Oberheim analog synths, including three envelopes, two LFOs, tracking and ramp generators per voice. The standard two-space rack unit features two Meg of RAM, but can be expanded up to eight Meg for 100 seconds of mono sampling and 50 seconds of stereo at 44.1kHz. A SCSI port is also standard, as are eight individual outs. A keyboard version is also scheduled to be available for about $500 ▶

The AMR MIDI Manager offers inexpensive remote control for MIDI synths, sequencers and drum machines.

One of several new offerings from Roland is the D20, featuring an onboard 16,000 note, nine-track pattern sequencer and a 3½" disk drive.

Kawai's Q80 MIDI sequencer has a 3½" disk drive capable of storing 150,000 notes and 32 tracks per song.

Dynacord's impressive new ADS, Advanced Digital Sampler, features 16-bit stereo sampling and extensive voice modulation capabilities.

▶ more.

The really high end of the sampler market was expanded with the release of the new **Mellotron** products. The MIDI Symphony, Electric Symphony and Studio Symphony 16-bit stereo sample playback systems signalled the company's return to its roots in a big way. Each of the systems are based around rack-mounted AT-compatible computers and customized music software. The optional SoundTrap allows you to do 16-bit stereo sampling at rates between 12kHz and 48kHz. The different configurations vary from IMeg of RAM and eight voices in the MIDI Symphony to 8Meg and 24 voices in the Studio Symphony.

Casio finally came out with a rack-mount version of the FZI called the FZI0M ($2499). It maintains all of the functions of its predecessor, including 16-bit sampling and a large LCD display, and doubles the standard memory to 2Meg. The big news in the Casio booth, however, was the company's new fat sounding VZI digital synth ($1399). The 16-voice, multitimbral, four-output VZI uses Interactive Phase Distortion (iPD) Synthesis, a more complex variation on the PD synthesis found in the CZ series. The VZI sports the same large size LCD display as on

the FZI for easy, graphic editing of the synth's envelopes and other parameters.

Over at **Kawai**, the big news was the company's KI ($795) and KIM ($495) synths with digital sampled waveforms (see this month's In Brief for more details). Kawai also introduced the Q80 ($795) hardware sequencer with built-in disk drive and extensive note editing. **E-mu** demonstrated a new version of their Emax called the Emax SE (Synthesis Enhanced) ($3295) which is a software update loaded via disk that includes Spectrum Synthesis and additive synthesis. Existing owners will be able to upgrade to these impressive sounding capabilities for about $100.

Oberheim added to the single rack fray by introducing the Matrix 1000 ($575), which is basically a Matrix 6R with 1000 preset voices, 200 of which are programmable from a computer with 6R voice editing software - no front panel programming is available.

Other companies showing MIDI processor-type products included **KMX**, who showed the MIDI Central 15×16 programmable MIDI Patch Bay, Korg's KMP68 6-in, 8-out MIDI patchbay, and **360 Systems'** 8×8 MIDI Patcher ($329) with memory and 2×12 MIDI Data Buffer ($129). ■ BO'D

Who's in Control?

WITHOUT A DOUBT, I'm nothing if not in control – and the show may well have proved I'm nothing. Be that as it may, I was chosen to cover MIDI controllers. And as was the case with the other instrument categories, few truly new ideas actually materialized; most were characterized by more sophisticated software, slicker packaging and added features.

The notable exception was not even available for public consumption (although setting up a clandestine rendezvous with a journalist and asking her to keep quiet about it is an extremely effective way to make sure that everyone knows what's happening), and came from a surprising source. The Suzuki Kazoozle KZIM is a self-contained voice synthesizer with 16 internal sounds, which allows octave shifts, chorus effect, playing in octaves or fifths and an output jack. Plus it sports a MIDI Out - yes, it's a MIDI kazoo. Apparently the instrument I saw is a prototype and still in R&D, but Suzuki hopes that the first models will be available in a few months for around $99. I don't know about you, but I'm getting my name on the list for one as soon as they're out.

On the more serious side, the most significant changes in controllers came in among the large assortment of MIDI guitars, which are obviously fighting head to head for market share. (Though no additional information could be obtained, Yamaha apparently previewed an impressive guitar controller at their dealer meeting which could make things even more interesting.) Probably the most notable improvements are in the **Passac** Sentient Six, whose software updates include increased capability of the pick direction feature (two MIDI channels can be controlled from one string now), the addition of a sequencer which can handle up to 1000 events, an optional 64K RAM, and an arpeggiation feature which can sync to MIDI

Casio jumped into MIDI wind synthesis with their inexpensive DH100 digital horn.

clock. Passac's demonstration centered on the capabilities of a Strat modified with the MPXI Kahler bridge ($250) controlling the SSCI computer ($995), and was indeed impressive.

Phi Tech was again showing the Photon, and have added some nifty software updates since last reviewed (see MT April '87). The 4.0 version will be released in March, incorporating a performance mode (a short loop which can be recorded and overdubbed at will), and the ability to sync to either an external or internal clock. Also new is MIDI Echo, which basically creates a MIDI merge ability when used with a second instrument, and remote preset selection, allowing patch maps to be set up from the neck of the guitar. The Photon with the foot controller, converter, and pick up is $1295; the software upgrade costs $99.

Guitar synth players will probably be excited about the new packaging of the Quantar Controller from Beetle ($1295). The unit is entirely self contained and battery powered, with switches on the front panel for selecting rhythm or lead, a momentary switch

Beetle's Quantar MIDI guitar controller system is now fully self-contained.

for selecting the patch by fret and string, and one for tuning. Also new is a palm pad for assigning pressure sensitivity. There's some question about how easy this one will be to program; only an MT review will tell for sure.

Casio also added to their existing line with the introduction of the PG380 ($1499), a MIDI controller which provides 64 preset internal sounds and optional ROM cards for expansion. The unit uses Casio's new Interactive Phase Distortion technology, the same as in their new VZI synth, with up to eight "oscillators" per patch and eight-stage envelope generators. The front panel includes an area with controls for preset tone volume, card key, octave-up key, octave-down key, chromatic key, and program keys. The LED shows program numbers, and there is a built-in electronic tuner.

Casio also introduced a wind controller, the DHI00 digital horn, featuring six preset tones, a portamento effect, a built-in speaker

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and, most importantly, a MIDI Out. The fingering is said to be the same as that on a recorder (the wooden rather than the electronic type), and offers a key transpose feature if the fingering's too tough. It's a bit of a toy, but for $179, it may get a lot more players into the possibilities of wind synthesis.

New keyboard controllers were scarce, as well as disappointing. At the Akai booth, I drooled and moaned over a gorgeous controller, the MWS76 MIDI Work Station – the latest in the Akai/Linn project, only to find out that it doesn't really exist. I can only hope that Japan will decide to go ahead on it – not only did it have the best keyboard feel of any of the controllers at the show, the plans are to install the ASQI0 sequencer on board. Akai, don't fail me now.

The only other new keyboard controllers I encountered were at the Imagine Computers and Software booth, the exclusive distributor of the Cheetah line of products. If you want affordable control, you may want to check these out; just be forewarned that they look and feel as inexpensive as they are. Still, finding a controller for $520 is truly amazing, even if it doesn't offer the kind of control most players want. To get that, you need to investigate the Cheetah MK7VA, which does offer velocity-sensitive keys, aftertouch, three split points, four MIDI outs and a patch change keypad – for $1125.

The ever-imaginative folks at KAT were showing their percussion controller, enhanced by some really clever software updates. Three independent controllers can now be zoned onto the keyboard in any way you like, each setup can send program changes to four different MIDI channels, and program change numbers have been increased to 128. Seven reassignments are now available, and the reassignment controller can be layered on top of the other controllers, providing up to three notes per pad. There's not enough space here to go into all the details, but if you've been thinking of purchasing KAT, now may be the time. Masters are still $1095; expanders are $595 each.

Several new MIDI foot controllers were available as well, the most interesting coming from Yamaha for use with the WX7 wind controller – the MFC2 ($325). Others of note were the MIDI Mitigator ($395) of the Lake Butler Sound Company, and the Elka DMPI8 bass pedal ($595). Look in coming issues for news items covering these more completely.

In retrospect, there were some interesting new ideas presented in controllers which, if not enthralling, ought to help us get things under control. I'll have to figure out what will help me most in that regard before the next NAMM Show. ■ DP

The Beat Goes On

ELECTRONIC DRUMS, SAMPLING drum machines, drum triggers. All of these devices have been refined, expanded, and tailored so that almost everybody can find something to fit their playing style and budget. This year's ▶

▶ emphasis is on systems which can be added to and updated, rather than scrapped to begin again with yet another black box.

The heart of **Yamaha**'s new D8 electronic drums is the PTX8 tone generator which holds 26 internal drum sounds – similar to an RX5 without the sequencer. Optional ROM cartridges expand the palette of sounds to include latin percussion, effects, basses, and more. The D8 system with pads, PTX8 tone generator, and two double mount stands lists for $1675.

Also new from Yamaha is the RX120 Digital Rhythm Programmer ($350), a product for those of us who would rather play than program. The RX120 has 40 preset rhythm patterns, each with eight variations. At the push of a button, you can have a samba or a rock beat, and patterns can be chained together to form 20 songs. PCM samples provide the sounds which can also be accessed by other devices through MIDI.

Yamaha's RX7 Digital Rhythm Programmer deserves mention here, since this is its first NAMM showing. It's easy to think of the RX7 as a scaled-down version of the RX5, but Yamaha has added so many new features and great sounds that, in some ways, the RX7 almost surpasses its big brother, stereo outs notwithstanding. (By the way, the RX7 sells for $895, not $795 as incorrectly printed in the MT review.)

Going along with the "update" and "system" idea inherent in today's products, **Kawai** introduced their R50e digital drum machine ($495), which is an R50 with the sounds of Kawai's CP2 sound chip: electronic drums, basses, orchestra hits, and brass.

Akai, along with Roger Linn, showed the new MPC60, an all-in-one MIDI workstation which combines the features of an extensive MIDI sequencer with a sampling drum machine. This is an impressive machine which lists at an impressive $5000. A new product, the ASQ10 ($2500), provides all of the sequencing features found on the MPC60, without the sampler.

On the budget side, **Imagine Computers and Software** introduced the Cheetah DP5 electronic drum kit ($455) consisting of five pads and a steel frame for mounting. The DP5 can be used to trigger the Cheetah MD8 MIDI digital drum machine ($415), which has eight digital sounds. Beware: these products look and sound even less expensive than they are.

Drum triggers, drum triggers, wherefore art thou drum triggers? Prolific is one word that comes to mind. Others are creative and fun.

Dauz Drum Pads ($90), from **Dauz Designs**, are 6" velocity sensitive rubber pads which come in custom colors and can be mounted just about anywhere and on anything. Due to their small size, surprising numbers of Dauz pads can be added to your existing setup without sacrificing space. For marching band enthusiasts who want to add some MIDI sounds, Dauz has the answer: six Dauz pads mounted on a marching bass drum harness!

From **Engineered Percussion/Rafco**

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Dan Dauz showed off his portable trigger set to the new Associate Editor of Rhythm magazine, Michael McFall.

come E-Pedals ($269). These pedals attach to the floor via velcro (they do not slip) and have a movable foot board with adjustable spring tensioning that contacts the trigger point. An adjustable heel plate provides a wide range of heel placement for comfort and leverage and two quarter-inch phone jacks allow for two or more E-Pedals to be used together. The feel is very much like a regular footpedal without a beater. I like 'em.

The **Techtonics** Beatmaster acoustic drum trigger ($37) attaches directly to the head or rim and has a pickup sensitivity adjustment control to allow contouring the trigger signal to help eliminate false triggering. By adjusting the sensitivity, one Beatmaster on the head and one on the rim can trigger two separate sounds.

Speaking of acoustic drum triggers, **Zildjian** showed its ZMC1 cymbal miking system consisting of six microphones and a six-channel mixer, which supplies phantom power to the mics and separate EQ and effects loops for each channel. The microphones attach to the cymbal stand above the tilter directly underneath the cymbal to minimize bleed through. The complete system retails at $995 and individual microphones sell for $105.

Aesthetic drum triggers? **Modus Novus** shows the "new way" to trigger electronic sounds with their designer free-standing drum frames. These tubular frames do not provide support for traditional pads like a rack. Rather, the pads are overlaid at various points in the structure so that pad and tube are indistinguishable. It looks interesting, but at $2500, only rock stars can afford it and only a large stage can accommodate it.

And now, production versions of the **Simmons** SDX, today's state-of-the-art for electronic drums, from the zone-intelligent pads to the Mac-like pull-down menus for easy programming and sampling. This is an all-in-one open system: 16-bit sampling at 44.1kHz; 8 Megabytes of RAM storing 88

seconds of samples; zone-intelligent pads with up to nine samples assignable per pad, controlled by dynamic and strike position; MIDI, SMPTE, SCSI; the list goes on.

The way in which sounds respond to the action of the sticks on the pads can be tailored by constructing "drum heads" on the screen from a library of surfaces. Each surface determines the way in which one particular aspect of the sound changes relative to the weight and position of each stroke. A surface is available which varies the starting point for each stroke, for example, thus negating the machine gun effect associated with electronic drums, and there is a damping surface which enables cymbals to be choked by grasping the edge of the pad. In all, up to eight surfaces can be bonded together to create a "drum head" that will respond just as an acoustic instrument.

Now, the bad news. A full-blown SDX system sells for about $10,000. I wonder if they'll take a check? But the good news is that now that this technology exists, all of us will benefit in the foreseeable future as Simmons and other manufacturers begin to incorporate SDX principles in the designs of other, less expensive products. Yeah!!!

Simmons also showed off the new Portakit ($999), a self-contained, 12 pad MIDI controller and sequencer designed to enable drummers to conveniently play MIDI sound sources. Look for further info in future MTs.
■ MM

Process This

FURTHER EVIDENCE OF many progressive, already-established trends was to be found in practically every booth. Among those is the movement toward compact, inexpensive rack-mountable signal processors, often ½ or ⅓ rack sized, even from (formerly) exclusively high-end companies. Likewise, MIDI is on everything from patchbays to reverbs, costing from two hundred to several thousand dollars, and the potential of SysEx data is finally being tapped in the form of dump facilities for many new products.

If MIDI capability was once just a creeping tendency that snowballed, surely "open architecture" is another. A lot of companies seem to be coming to the realization that if they plan for expansion they won't find themselves redesigning boxes every year or two.

In addition, some manufacturers are continuing down the path of more tracks in less space for analog recording formats. One such example is the 238 Sync Cassette ($2295), an eight-track cassette recorder from Tascam. Its anticipated sync-to-video capability (no timetable on that) and extensive transport controls, as well as specs that Tascam says rival the performance of the 234 four-track cassette deck, will put it in its own class.

TOA also had on display an eight-track cassette deck (the MRT8) that is currently available only in Japan but may be seeing its way to the States in the not too distant future, possibly with some design changes.

Aside from the number of tracks, it has little in common with the Tascam unit, incorporating a rudimentary mixer section but lacking the advanced transport and locate functions of the 238.

Some examples of what I'll call micro signal processors are the new MicroFX series from **Valley International** and the Microverb II from **Alesis**. "Outstanding performance at an astonishing price!" is the battle cry from Valley, whose noise gate, compressor, de-esser, single-ended noise reduction, attenuator and booster are packaged in ⅓-rack size boxes with fins on the sides for secure mounting in a rack adaptor. Minimal front panel controls and metering and bright silk screening top off each of the $149 units. Microverb II ($199), with 15kHz bandwidth and 16 all-new programs ranging from "Ambience" to "Endless Space," will also be a welcome addition to the market. In other breaking news, the price of the Midiverb II has been cut from $399 to $269, making it possibly the lowest-priced MIDI reverb around.

From **DigiTech** comes the DSP64 ($499) and DSP32 ($299), both of which made their first appearance ever at the Winter NAMM show. Featuring a custom chip, the 32 (also called the Studioverb) is a stereo in/out reverb with a wide range of factory programs (32 total, configured as two banks of 16) and 16-bit linear PCM conversion. The 64 is essentially two 32s housed in one chassis for convenience. Program content is printed right on the top of both processors, just as on the DSP128.

Boss, **Peavey** and **Rocktron** had some interesting offerings for guitarists. The ME5 ($825) from Boss, a scaled-down version of Roland's GP8, is a multi-effect pedal-type box that allows a total of five simultaneous effects and comes with 64 presets. Programmability and footswitch/expression pedal control are extensive, a dump facility for SysEx data allows for external storage of user programs, and the unit recognizes MIDI program change commands.

The Peavey DEP3.2S Digital Sampling Processor ($349) is a sampler/delay unit featuring 12-bit conversion and a continuously variable delay range from 1.25 to 3200 milliseconds with a 20Hz-10kHz bandwidth independent of sample or delay time. The unit is mono in/stereo out with switchable operating level, front panel and remote trigger capability, loop playback and more.

A total of 18 new products were on hand from Rocktron, among them a series of half-rack processors by the collective name of ProRax. Most of them offer multiple effects, such as the DDL/Chorus/Expander. Prices for the series range from $169 to $379, and a separate power supply is necessary. Specs for the line were not immediately available.

Korg expanded its line of signal processors with the KEC42 EQ/Compander, with four independent three-band equalizers that can be ganged together for really sticky EQ problems, and compressor, limiter, gate and expander functions available. Price will be in ▶

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By way of an update to the ADR 68K Digital Reverb and Effects System, **AKG Acoustics** had on hand their Version 4.0 software ($1995 to current ADR owners, or $6990 for the entire package), which expands the unit's sampling time and capabilities as well as MIDI implementation while adding new split reverb programs. Flexible MIDI mapping, a feature that allows dynamic changes to be captured and stored by a sequencer, and sample storage via the MIDI MMA Sample Dump Standard (in either 12- or 16-bit format) or SysEx are just some of the improvements. Documentation and Help screens have also been upgraded considerably, and there are some cosmetic changes to the hardware as well.

Dynacord showed a new three-bit digital reverb and effects processor called the DRP20, still in the prototype stage. Some anticipated features: 32-bit A/D/A conversion, stereo ins and outs, 100 presets, 128 user memory slots, MIDI, a programmable gate, and the sort of combined effects that have been popping up on more expensive gear for the last year or two. Dynacord expects the DRP20 to retail in the $2200-2500 range.

In the area of new analog processing, there were notable, inexpensive new items from **JBL** and **Furman.** JBL's 7110 Limiter/Compressor ($450) has "zero crossing detector" circuitry that minimizes low frequency distortion through successively

faster release times for higher frequencies, and a sort of "panic button," the Automatic Preset, which will automatically compress programs according to internally preset parameters when engaged. Perhaps the most interesting aspect of the 7110 is that it has two completely independent compressors (peak and average gain detectors) which are always functioning simultaneously.

The Furman GQ15, 31, and 62 graphic equalizers are all in the $400-650 range, coming in stereo 15-band, mono 31-band and stereo 31-band configurations. Through a hybrid design involving both op-amps and discrete semiconductors they claim low noise even with extreme degrees of cut or boost. Their PQ3 ($359) four-band mono full parametric EQ features the so-called "constant Q" curve for a wider bandwidth range in boost than in cut – desirable for notch filtering things like fret buzz.

All told, in the signal processing area there was no one item that captured everyone's attention. Gazing into our crystal ball, the verdict is – more of the same: smaller, cheaper, better. ■ *AZ*

Ones and Zeros

THE MUSIC SOFTWARE at NAMM is probably the hardest to check out. Software by itself doesn't sound like anything, so the pre-programmed demos aren't anything to go by. But I think that there were some very serious developments at NAMM that point in

some interesting directions.

Voyetra was on hand with Sideman 8IZ editor for IBM PC and compatible computers. The SM/8IZ features a randomizing function which can be applied to any number of selected parameters. Voyetra has made the program compatible with Software Carousel so that you can assemble a working environment consisting of, for example, the Sideman, a sequencer, and "universal" librarian.

The idea of having several programs up and running at the same time on one computer is becoming popular as more musicians realize that it can happen. **Dr T's** was on hand with the Multi-Program Environment, which allows you to have several programs booted simultaneously on the ST. Of course, the Amiga KCS benefits from that computer's multi-tasking abilities, but Mac users can look forward to using Multifinder to similar ends.

Imagine Computers and Software, the Santa Barbara-based distributor, have picked up the Cheetah line of software. The Cheetah line operates on the IBM PC in Microsoft's Windows Environment. Imagine also distributes MT Master, an MT32 graphic editor librarian for the IBM which is RAM-resident. That is, you can keep the program booted while running some other program.

Dr T's is distributing Pro-Sample ST, an S900 sample editor which can also convert samples into additive form for transfer to the Kawai K5, so that you can analyze virtually any sound you hear, and come up with an

Drake Philbrook, Vice President of Mellotron, beamed with pride over the company's new Studio Symphony Sample Playback System.

additive equivalent, which you can then stretch, hack and invert however you so desire. The Prophet VS is also supported by Pro-Sample ST, though it can only use single waveform cycles. This idea of "bridging the gap" between instruments seems to be yet another direction in which music software is going, and I think that the Pro-Sample ST program is just the tip of the iceberg.

Blank Software introduced Alchemy, a Mac-based sample editing program with a twist. The twist is that you can create stereo samples from monophonic source material by adding ambience, delays, panning or whatever. Alchemy is the first program to handle a DAN, or Distributed Audio Network. DAN is basically Blank's way of having multiple samplers connected to the Mac via MIDI, SCSI or RS422, and leaving it to Alchemy to request or send samples to whatever sampler you specify. Alchemy also provides a harmonic analysis function which allows you to muck around with your samples in the frequency domain (as opposed to the time domain), using additive synthesis techniques, and then resynthesize (definitely a buzz word to be reckoned with in '88) a new sample for playback on a sampler. Not bad at all.

Lyre, the manufacturers of the FDSS (Fourier additive Digital Synthesizer System), introduced FDSoft, an IBM-based additive synthesis program which offers similar features to the FDSS, but rather than use Lyre's rack-mount hardware for true additive synth voices, FDSoft relays the sounds to stand-alone samplers over MIDI using the Sample Dump Standard, much like Digidesign's SoftSynth.

All told, the gap between samplers and additive synths is closing, but it remains to be seen whether musicians will prefer to use a sampler or an additive synth to play mutated samples. It looks as though there will finally be some truly useful application for those FFT displays we've been looking for so many years.

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Drumware showed the new Soundfiler and GenWave/12 sample editors for the Atari ST. The Soundfiler supports the Akai S6l2, S700, S900, and X7000. GenWave/12 supports the S900, Emax, SP1200, and Prophet 2000/2002. In addition to offering digital EQ of samples, the Drumware programs also provide digital enveloping as an alternative to using the sampler's enveloping capabilities. These editors offer speedy alternatives to other sample editor programs which take a while before you can audition altered loops.

Digidesign introduced the Sound Accelerator board for the Mac SE and Mac II computers. The card provides 16-bit D/A conversion and number-crunching capabilities which will speed up work with Sound Designer packages. I'd wager that they have plenty of other ideas for the card which will emerge in the course of this year. Incidentally, Q-sheet was about as common a sight as a DX7 at NAMM. Even Peavey had it up and running to show off their enhanced PLM8128 MIDI programmable line mixer.

Also being displayed by Digidesign was Turtle Beach's SampleVision, an IBM PC-based sample editor for the Akai S900. It isn't altogether surprising that Digidesign have chosen to branch out into other computers besides the Mac.

Digidesign has also started distribution of C-Lab's Creator, an impressive ST sequencer
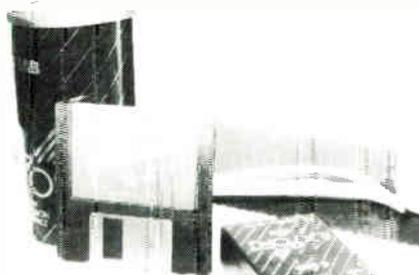
Digidesign announced that they would be distributing C-Lab's Creator sequencer program for the Atari ST.

which, among other things, lets you edit your sequences while they are playing. C-Lab has also come up with a $150 add-on for the ST which provides an additional three MIDI ports. When used in conjunction with Creator, each MIDI output can be addressed separately, thus allowing up to 64 synths (4×16 MIDI channels) to play different sequence tracks.

Having multiple MIDI ports on computers is becoming par for the course, now, as demonstrated by new products from the likes of **Mellotron** (with the Muart IBM MIDI port), **Hybrid Arts** (with the MIDIPlexer), and **Southworth** (with the Jam Box 4+ and the new Jam Box 2).

Apple Computer, who attended NAMM for the first time this year, introduced a basic $99 MIDI port for the Mac. Like **Atari**, who also exhibited at NAMM, Apple showed no music software of their own, but provided space to third party developers like **Passport** and **Intelligent Music** to show the scope of musical applications for the Macintosh. Julian
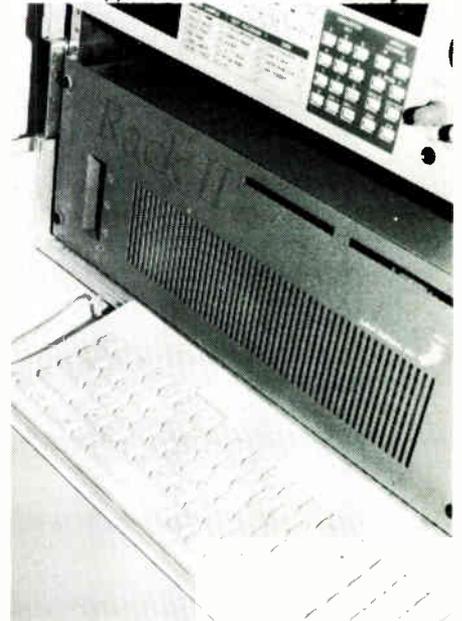
Julian Music Systems showed a prototype of their rack-mountable Mac II, the Rack II.

Music Systems, an Apple Value Added Retailer (VAR), displayed a rack-mount Mac II entitled, appropriately enough, Rack II.

Optical Media had a WORM (Write Once Read Many) drive on display at the E-mu booth, where it was connected to an EIII. Considering how quickly CD-ROM technology is taking off, it will be no surprise to see WORMs do just as well in large-scale professional environments. Word had it around the show that Hybrid Arts also has something up their sleeve, but there was no concrete evidence to go by. Hybrid Arts did introduce their own line of hard disks with 60, 80, 160, 360, and 720Megabyte capacities.

Hybrid Arts also announced a public domain program which converts sequencer files in **Opcode**'s proposed file format into SmpteTrack format.

So the question to ask is, are computers really allowing synths and samplers to turn into musical Transformers? Stay tuned to these pages . . . ■ RD.

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What today's mu is a good do

For years now, Yamaha' has been giving you the tools to explore new musical worlds.

But today we'd like to direct your attention to planet earth. Where you can capture sounds that are absolutely real, with the new TX16W Digital Wave Filtering Stereo Sampler.

The TX16W allows you to sample anything you can hear, and then filter that sound while it's still in digital form. So you can create the cleanest possible tonal effects.

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Perhaps even more important, the TX16W lets you build sounds in a very realistic way. For example, you can assign up to 32 samples to any single voice, for a natural effect across the entire keyboard.

In addition, you can layer up to 16 voices, using the Crossfade function to assign designated voices to different sections of the keyboard. Resulting in gradual tonal changes, as opposed to abrupt splits.

Likewise, a Touch-Crossfade feature makes it possible for you to combine designated voices as a function of key velocity.

Photography Tim Goodyer

MIDI MIXIFICATION

MIDI has expanded beyond the boundaries of playing notes and changing programs and moved into the realm of studio automation. You can now use a variety of MIDI devices to perfect your mix. *Text by Chris Meyer.*

IME TO MAKE some people upset. Let's say you've just written your best song ever – perhaps the best song of the century. It's even recorded, either to multitrack tape or into a MIDI sequencer. Fine.

You're only half done.

The debate over what is more important – the composition or instrumentation and mix – probably started when our race first came up with two logs or drums that sounded different. I wanna sign a truce and admit that either the tune or the mix can reinforce or wipe out the other. Time to focus on making *both* absolutely killer.

There has been talk for some time of sorcerer/producers who could play the recording studio like an instrument. Problem was, *they* were the ones doing it – not you, the musician. Or from an

producer/engineer's point of view, you can't understand why the talent insists on using those drabby drum sounds and wimpy strings. MIDI has finally integrated the process so that one can have some degree of control over both. Now the studio *is* an instrument.

Making a distinction between The Song and The Mix, this article intends to reveal some of the principles and tricks of MIDI Mixification. Armed with the axioms Variety is the Spice of Life in our left hand and Hooks Make Hits in our right, here we go . . .

Playing the Instrumentation

OBVIOUS, BUT STILL ignored by some is that MIDI allows you to go back and change what instrument played what part. Would a sampled piano sound better than

that FM Rhodes? A funk bass *layered* with a fat analog sound?

Fine. But what about *changing* the orchestration during a song? With all the freedom that preset synthesizers and MIDI sequencers allow, it's amusing how many still limit themselves to one set of sounds throughout a piece just like a real band would. Part of this is admittedly caused by more prevalent use of samplers (which tend to have only one good sound per disk) than synths these days and the impractical amount of time it takes to load a sound during a song. If you're an ancient holdout still predominantly using synthesizers, try spicing up your arrangement by changing patches either for just the second chorus or every other bar – the latter an old, legitimate technique called "hocketing" (for reference, listen to Wendy

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Carlos's Scarlatti interpretations on her *The Well Tempered Synthesizer*). At last, there's a reason for those 3000 DX patches you've collected with 24 variations of each sound!

On samplers, try creating alternate presets by changing just a few parameters of the basic sound – amplifier decay and filter cutoff are a pair of the easiest. Horn disks tend to come with several instruments of the same family on one disk – these are particularly fun to hocket with. Or stack a line just for a couple of bars to quickly get in one's face and back out before they know it. Changing drum kits or a single percussion sound inside a kit is just as legitimate.

Pulling these program changes during a sequence often takes a little more than the obvious amount of thought. Many instruments like to choke off any sustaining or releasing voices while changing presets, and then take a fraction of a beat before they're ready to play again. Place the program change a clock tick or two before the first note to be played with the new voicing – this gives the last notes the maximum time to die out, but gets the change done before missing the downbeat of the next bar.

You can add repeatability to a tricky orchestration by saving the patch data with the sequence itself. It's not unusual to own more patches for a synthesizer than fit inside the machine's memory at one time. This would normally require careful notation of what patches to load to replay a particular sequence (something that you will still have to do with sampler disks until hard disk systems become more common and less expensive). However, it's not unusual for today's sequencers to also record system exclusive data – the stuff synth presets are made of (or can at least be stored as). Consider your synth's internal program memory to be your scratchpad, and keep your patch library externally in cartridges or librarian programs. Load the patches you use for a particular sequence into the internal memory. Once happy with your orchestration, save the presets used into a couple of blank bars at the start of your sequence (or as a "setup" sequence you play just once into your synths before starting work on a particular song). Voilà – one less thing to worry about.

Many synths and samplers these days also transmit and receive the standardized MIDI master volume controller. From a simple balancing to a rudimentary mix can be created using this feature. More instruments receive it than transmit it, so check your owner's manual. If you have one instrument that transmits it, you can ride its master volume knob to mix down all the other toys in your chain that receive it. Otherwise, you'll have to resort to one of the all-too-few MIDI performance

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boxes (Yamaha MCS2, JL Cooper Expression Plus, etc) that can send it, or use a mapper (Yamaha MEP4, Axxess Mapper, etc) that can translate something such as mod wheel into master volume. If worst comes to worst, there's always hand-typing it at the sequencer (it's controller #07, for those with sequencers that let you directly access the MIDI data).

Signal Processors

THE SONG AND orchestration is done; perhaps even a rudimentary mix or level balance. The next step is playing with the processings of those sounds.

It should be noted at this point that the MIDI automation of processing and mixdown we're going to be talking about from here on out doesn't apply just to MIDI sequenced material. It is perfectly legitimate to use a MIDI sequencer synced to tape just for changing details of the mix. MIDI has gotten beyond just what notes get played, ya know . . .

Almost all reverbs and multiprocessors (except for the very cheapest and, oddly enough, most expensive) have MIDI on them. These MIDI implementations typically cover changing the program, saving the preset information, and perhaps changing the output volume.

Sound familiar? Yep – all the things we talked about above in relation to more creative orchestration of the sounds used. All the same principles apply to signal processing. Effects levels can be changed and presets remembered in the same way as instruments. More fun is changing the treatments. I attended a session of a technical conference where the speaker demonstrated playing a simple, repetitive drum pattern over and over while changing the reverb every four (or so) bars. The crowd was entranced, and asked him (much to his amazement) to play it over again. How often do entire, well-crafted songs get this request?

Just as synthesizers like to cut off their old sound and retrigger their new sound when a program is changed, most reverbs mute and cut off their old signal, switch programs (with the venerable Lexicon PCM70 in particular taking a looooong time to do this), and start their new effect as if sound has just been fed to them. Try to find a place where the instrument being effected has been silent for a few beats to change programs, so the reverb or delay has a chance to die. If no such space exists, prematurely end the effect by fading it out with the master volume control, change it, and pop it back up immediately. Some effects change fast enough that they *can* be placed right on the downbeat to no detriment – one often hears the chorusing or reverb on the body of the sound, not the attack, so missing the very start isn't a problem. Experiment.

Here's an interesting trick to try with ►

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programmable delays. Try delaying an individual drum sound or the bassline (without letting any of the original through) to alter the "feel" of the rhythm section. Doing it for just a break or chorus again works as an effective tease to renew flagging interest in a song, and is a heck of a lot easier to do with a DDL and MIDI than playing it that way or altering the line at the sequencer. Putting it in every turnaround can be an effective hook.

Delays or gated reverbs can also help play with the rhythm of a song. Stretching a gated reverb on a snare or tom from an eighth note to a quarter suddenly slows down a song even though the tempo remains the same; going to a sixteenth suddenly tightens it up. Delays mixed with the original can be manipulated from a straight timed echo to a swing or triplet figure and back again and this will also spice up an otherwise repetitive rhythm track. Making these changes as part of the MIDI sequence means nailing that change every time.

To figure out what delays you're going for, drag out a calculator and invert the tempo from beats per minute to minutes per beat; multiply it by 60 for seconds per beat; multiply by another 1000 to get milliseconds. Dividing by two or four gives eighths and sixteenths; dividing by three gives triplets.

Programmable equalizers, such as the ADA MQI, are a relatively new phenomenon. An EQ change can work the same as a subtle (or, of course, drastic) program change for adding some sonic variety to an instrument's line. The most riveting example of this I've heard is PIL's "Memories" (off the *Second Edition* album). The song consists of the same one bar bass riff throughout, whining voice, and a simple repetitive rock shuffle beat on drums – not the most "memorable" arrangement. However, two entirely different sets of equalizations and ambiences trade out every few verses –

one restricted to the mid range with some distance to it (out-of-phase bass, normal drums, guitar with lots of tremolo and neck pickup, voice as if it's through a transistor radio in a distance) and one in your face and pumped to the ends of the frequency spectrum (very bottom-heavy electric bass and edgy hi-hat pushed to the front, normal voice with no ambience, and almost inaudible straight guitar).

Dynamic MIDI

WHAT HAS BEEN discussed above has been fairly static changes – "Now change to this program. Now change to that program." This is about the same as an instrument being able to play notes and change programs, but having no performance controllers – like mod and pitch wheel, aftertouch, and the like. Some newer signal processors (Lexicon PCM70, ART DRI, Eventide UltraHarmonizer, etc) are starting to allow performance control – real time changing of their parameters via MIDI.

The most common use of dynamic MIDI in signal processing so far has been harmonizing – select what intervals are created based on what MIDI notes are played into it (such devices include the Yamaha SPX90, Korg DVPI, Roland VP70, and aforementioned Eventide). Creating additional notes seems more on the side of The Song than The Mix. But that's what dynamic MIDI is doing – blurring that line.

Imagine the depth and speed of chorus changing with the mod wheel. Longer reverb times being selected like one would use a second release or hold pedal. Room size changing with the notes being played – smaller for the high ones; more cavernous for the low ones. The ultimate goal of a dynamic MIDI implementation is to make any parameter accessible from the front panel alterable over MIDI. A new range of effects and ideas from the sublime to the atomic suddenly pop up . . .

Mixing

FINALLY WE MOVE from the creation and alteration of sounds to the mixing of them. As with signal processors, there are both static (referred to as "snapshot") and dynamic MIDI level mixers. Snapshot mixers (such as the Akai MPX820 and the most basic mode of Yamaha's DMP7) are self-contained "normal" mixing boards that have the ability to remember setting of levels, pan, EQ, etc, and have those recalled via MIDI program changes. This can be thought of in exactly the same way as recalling a reverb or EQ preset.

The most minimal thing a snapshot mixer can do is mute and unmute a channel. Boring, you say? It's actually so useful that outboard mute boxes (ie. JL Cooper's MIDIMute) are available. At the very least, they can be used for cutting out tracks while they're unused. This gets rid of unwanted tape hiss and quiescent synthesizer hums and burbles. I was skeptical about how much this was really worth until I used one – suddenly it sounded like I was using more expensive equipment (10db of white noise can really drop a veil across a piece of music). They're also useful for covering thumps from switching programs or punching in and out on tape. Artistic uses include muting instruments to either thin something out or do a full "breakdown" – again, easier than editing a sequence to remove and replace an instrument's line for a few bars or remembering a precise move during mixdown.

With the exception of the (wonderful) DMP7, all dynamic MIDI mixers currently on the shelves are intended to be added on to existing mixers. In various incarnations, they are all VCAs (Voltage Controlled Attenuators) hooked up to MIDI. They go between the source signal and input on your normal mixer (typically plugging into the insert point), and set the level of the ▶

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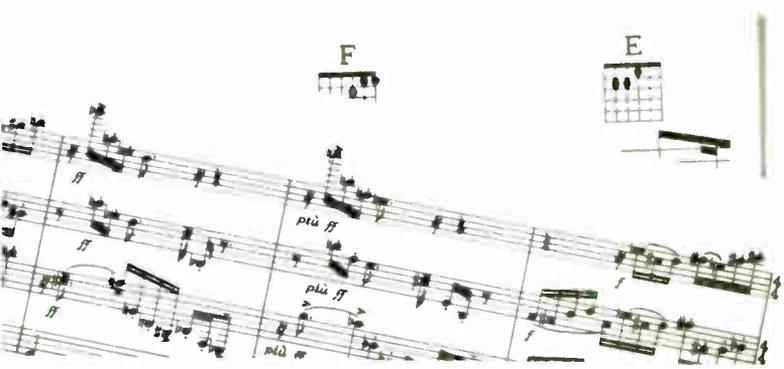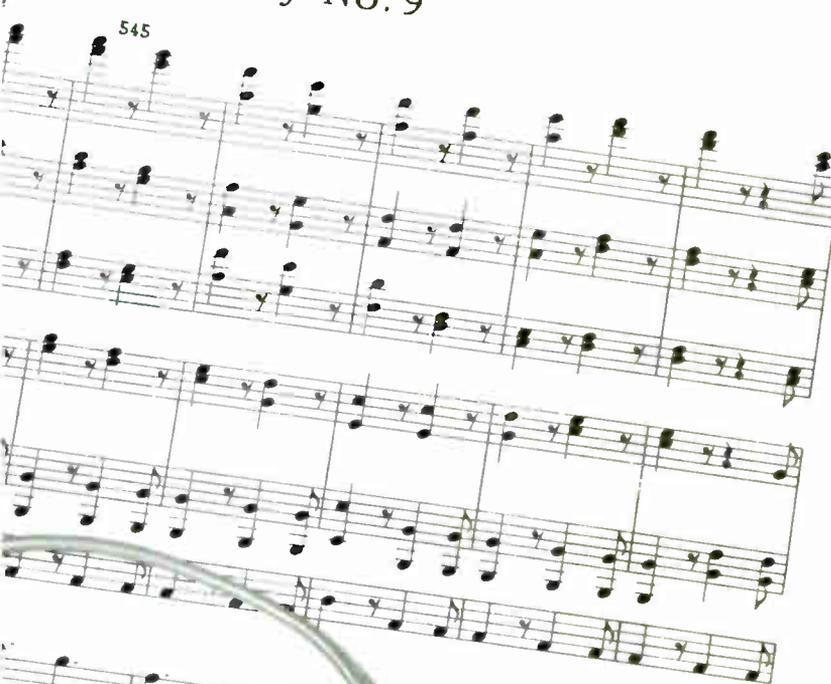
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signals before they reach the faders on the board. By leaving these faders up, the "VCA boxes" become a set of ghost faders that control the mix of the song. Multipass mixing is just like multitrack recording or sequencing - it's so much nicer to be able to work on one line, get it perfect, and go on to another instead of trying to "play" it all live on the board every pass.

VCA boxes offer an advantage over using the master volume at the instruments in that they tend to operate a lot smoother than the instrument itself. Internal volume controls also may attenuate a voice before it gets to the noisiest part of the output stage, leaving a hiss behind even though they're supposedly "off."

The price of VCA boxes is largely governed by three things - how they are controlled, the quality of the VCA within, and how intelligent they are. Some packages allow just an alpha wheel for changing VCA levels (Twister PAC, Iota MIDI-Fader). Others (Twister, MegaMix) run a program on a personal computer and have graphic faders which you move with a mouse to perform a mix. If these offend
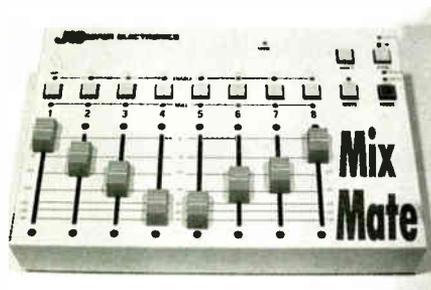
your sensibilities, you'll be best off looking for an alternate fader (Yamaha MCS2, or the data slider on many master keyboards) to do your mix. Others (proMIX, JL Cooper's MAGI and MixMate, MegaMix, Yamaha DMP7) have "fader boxes" available that are a second set of actual faders for the VCAs (the Yamaha goes as far as to have *motorized* faders to show precisely where the VCAs think they are).

A very direct relationship exists between the cost of an individual VCA and how much distortion and noise it adds to the signal - a critical listening test is *very* much in order before deciding which one to buy. They're just like any other piece of recording gear - forget the hype and weigh what your ears are telling you against the price.

Each audio channel (VCA) of one of these boxes is typically assigned to a MIDI continuous controller, all on the same or different MIDI channels. Each channel should be thought of as a separate instrument, as far as MIDI recording goes. Recording one channel's info is like one instrument line - make recording passes until you get it right. Punch in and out of the middle of a move to make smaller corrections. However, when channel 2
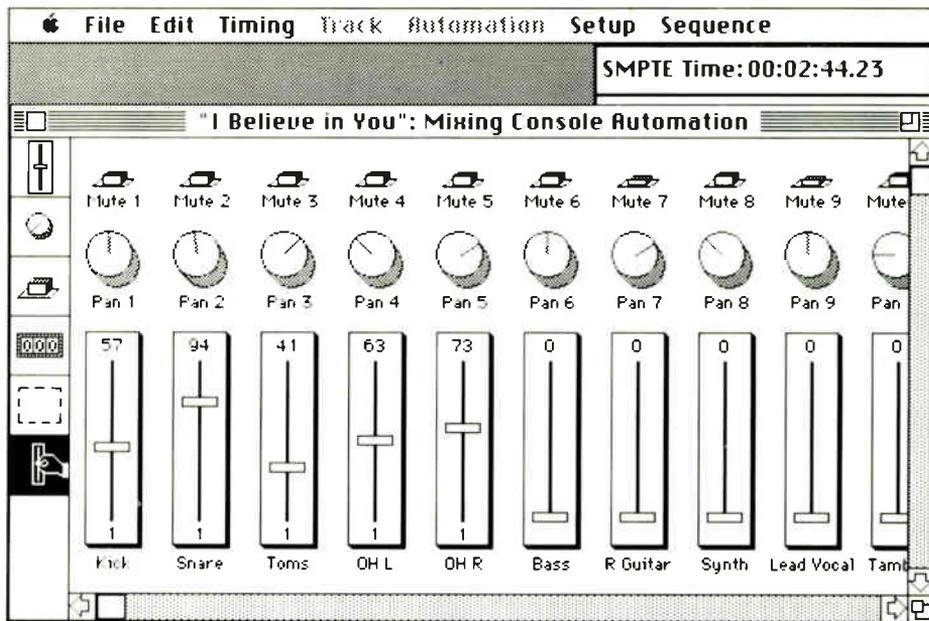
comes up, the fun begins. Just like an instrument pass, you don't want to lose what you did on channel 1. So, if you're using a normal MIDI music sequencer and a VCA box with no onboard intelligence beyond what MIDI controller goes to what VCA (such as the Iota MIDI-Fader), you'll either have to put each channel on a separate track, or put each VCA on a different MIDI channel and be careful what channel you erase if you want to re-record a move.

To counter this, some boxes (Twister PAC, proMIX, etc) have a degree of intelligence built in. They'll take the previous pass' MIDI information in, merge it with a channel's move made with their local controller, and feed the mix back out to be recorded on a new sequencer track. The idea here is to keep alternating between two tracks on the sequencer - one playing back the previous pass, one recording the new pass. This has the advantage of being able to back up one pass; it has the disadvantage of having to remember to ping-pong between tracks on successive overdubs.

Overdubbing an automated mix also differs from a musical line in that you'll often want to match the previous level of the ghost fader before starting to overdub the new continuation of this move (to avoid sudden jumps in level). This is called "update mode," and the process of matching the previous level is called "nulling the fader." No current musical sequencer has this mode. Therefore, some packages (JL Cooper's SAM and MixMate, MegaMix, etc) step all the way around the MIDI sequencer and take care of recording and updating themselves. Digidesign has recently created Q-Sheet, a mixing sequencer package designed with this style of working in mind, for those VCA boxes without a built-in sequencer.

So you think all of this is a lot of trouble?

Let me put it this way. I recently mixed a series of six radio plays that each had dialog, music, sound effects, and unwanted noises (punch in/outs, etc) checkerboarded at full volume across seven tracks. One was 24 minutes long. I want to meet the person who thinks they can remember almost a half hour of continuous fades, mutes, pans, and EQs. I ended up using a JL Cooper SAM and MAGI to automate the levels, mutes, and effects return, leaving my hands to the fairly menial tasks of panning and punching EQ in and out. I couldn't have done without it. And mine was just the most rudimentary use of the power it gave me. The revolutionary Yamaha DMP7 has brought the dynamic MIDI concept to a full mixing board, with *every* parameter being "automatable." Talk about an example of infinite possibilities . . .

Wait, Future, I Can't Keep Up . . .

MIDI GAVE US a lot of compositional power from its inception. Now it's giving us the same in mixdown. As with all things, there's a line out there somewhere where cute tricks cross over into gimmickry, but variety here is just as important as with the original sounds themselves.

Alas, very few seem to be exploiting these possibilities yet. Perhaps it's technological overload from all the options available (note how well preset devices such as the Alesis line are doing); perhaps it's just all too new a concept to be fully assimilated yet. It feels a bit like the aliens have landed, handed us a new piece of technology that we haven't dreamed of yet, let alone used, and flown off to let us puzzle it out. All I can say at this point is "Look! Look! Look what they left us! Let's start playing with it, and maybe they'll bring us more . . ." And from the looks of this NAMM that just passed, yeah, they did. ∎

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NO PATIENCE REQUIRED

Patience is not necessarily a desirable trait for a musician. When musical ideas are running through your head you need equipment that won't slow down the creative process. Make you wait. While you risk losing a great idea. Or the feel. Or the moment.

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Yamaha WX7
MIDI Wind Controller

Yamaha's entry into the ever-growing wind synthesis field is a compact but sophisticated unit that's priced lower than any of its competition. Horn players take note: this may be the one you've been looking for. *Review by Michael Andreas.*

IT'S TAKEN A little over a year for Yamaha's first woodwind-based MIDI driver to go from the rumor stage to the in-the-stores stage. During this period, Yamaha employed a very enticing marketing campaign which was highlighted by a brief article in the September 1987 issue of their *After Touch* magazine and a demo record which included examples of what this instrument

could do. And what examples they were. Lush string sections accompanying realistic oboe solos, heavy metal guitars complete with rhythm section backgrounds, great soprano sax, acoustic guitar, solo violin – it was stunning.

So, when I finally got the call from the MT offices (after a year of waiting to get my hands on one and three months after its original due date on the market) and

heard, "It's here!" I knew that, for me, Christmas had arrived.

The Packaging

THE FIRST THING you notice when you remove the WX7 from its packing box is that it comes with its own carrying case. This may not seem unusual to you, unless you consider that there are four MIDI wind instruments that I am familiar with, and Yamaha is the first manufacturer to realize that the musician might like to take his/her instrument to a gig in something other than its original cardboard shipping box. "This bodes well!" I note. The carrying case alone is quite impressive; flat black, about the size of a bass flute case and very hi-tech in appearance (you have to credit Yamaha with knowing how to make that initial impression a good one). I opened the case and, in all honesty, the first words to enter my consciousness were, "Darth Vader." Everything on the inside was black; flat black keys on a shiny black body, black plastic power pack with a black plastic carrying case, a black neck strap, black MIDI patch and extension cords, black spare mouthpiece, black key height adjusters. The only non-black things in this generously equipped carrying case were the polishing cloth (yellow), the drain plugs (red) and the six AA batteries (included). Note: keep an extra set of these available at all times; you'll be thankful you did.

Pick up the WX7 and you sense you are holding the future in your hands. It is very lightweight, 380 grams (approximately 13.5 ounces), and very accommodating. Immediately my fingers "knew" where to go on the instrument. Pick up the owner's manual and you realize why the WX7 was three months late getting to market. Yamaha took the time to be certain that things were done right. It's the most thorough documentation I've encountered for a wind controller. Twenty-one pages of clear instructions, including a section describing MIDI and its applications, a glossary of terms (with a fairly heavy, if somewhat understandable, bias towards FM synthesis), a one page sheet of manual corrections, French and German translations and a concise two-page fingering chart. (Note #2: If you purchase a WX7, enter the correction sheet info directly into your manual. It will probably save you time and headaches.)

Also enclosed with the WX7 is Sal

Gallina's book, *Expressive FM Applications*. If you are unfamiliar with Sal Gallina, he is (among other things) the design consultant who worked closely with Yamaha on the development of this instrument. (*Editor's note: An interview with Sal Gallina appears in MT December '87.*) Included with this book is an audio cassette which contains performances of several of his most usable voices, and the initialized MIDI information necessary to load 32 of these into a TX8IZ Tone Generator. The book proper consists of a primer on customizing the WX7 to the individual's personal playing style, a recommended Yamaha MIDI setup, voicing and effects

All designed to be played through a Yamaha MV802 eight-channel mixer, into a Yamaha PD2500 power amp, which in turn drives a set of (you guessed it!) Yamaha S300 speakers. In reality though, the WX7 is designed to be played through any MIDI device, and if you are already heavily invested in MIDI equipment, this is an inexpensive way to add some great expressive quality to your system. Just remember that to realize the full potential of the WX7, synths that accept Breath Control and After Touch data should be used.

For this review, Yamaha included a TX8IZ tone generator and SPX90II effects

program change key which is also operated by the right thumb is available as well. This allows five patch changes to be made remotely (from the instrument). Finally, there is the "Hold Key" (also operated with the right thumb), which is one of my favorite features. It allows the performer the choice of: 1) Sustaining any note as a drone while playing other notes above or below it; 2) Following any line with a parallel note at a fixed interval; 3) Transmitting the held or parallel notes on separate MIDI channels; and 4) Controlling both voices with the breath while transmitting on separate MIDI channels. The WX7's MIDI transmit channels, which are 1 or 3 in normal mode, and 1+2 or 3+4 in Dual Play Mode, are also selected with these keys. With full strings, Rock Guitars, Horn Sections, this feature works great. Shorter sounds, however, do not respond to the generated sustain messages.

Case *"Yamaha is the first manufacturer to realize that the musician might like to take his/her instrument to a gig in something other than its original cardboard shipping box."*

information for both the TX8IZ and DX7II voices contained in the cassette, and hints on how to get the most out of several of these voices. The book also has a separate appendix which contains Function and Voice Correction Data for the DX7II.

By now, I knew that the instrument looked and "felt" good, and that when mastered and played through some pretty upscale equipment, it sounded great. As of yet though, I had not played it. How easy (or difficult) is the WX7 to play, and how difficult (or easy) is it to get it to sound like the cassette?

Well, unlike the other writers who work for this magazine, I'm not going to make you wait until the conclusions section of this article for an answer. The answers are, yes, you can pick up the WX7 and start playing; and no, you won't be sounding like Sal Gallina for a while. To understand and utilize the many subtleties of this instrument is going to necessitate some serious study and many practice hours.

Overview

FIRST OFF, THE WX7 is a MIDI driver only. For the uninitiated, this means that there is no sound synthesizing capability contained in this instrument. Rather, it is a woodwind-based "controller" which allows wind players access to the world of MIDI. You achieve this by plugging the WX7 into the voicing module of your choice. Naturally, Yamaha would like one of their synths to be your choice. It is at this point where the relatively modest investment in a WX7 (it is the least expensive woodwind driver available) can begin to chip away at the down payment on your next box of reeds. Yamaha recommends a WX7 system which includes TX8IZ and TX802 tone generators and an SPX90II digital effects processor. From here you can move up to Sal Gallina's "Master Set-Up," which includes a TX8IZ, a DX7II, a RX5 drum machine, SPX90II and REV7 effects processors, and a DII0M distortion box.

processor with the WX7. Because the TX8IZ is so integral a part of this system, I will refer to it in this article. However, as impressive as it is, the SPX90II is not as generic to a discussion of the WX7. Suffice to say that a good effects processor is of major importance in getting the most from any of the wind synths I've played.

The Basics

THE WX7 EMPLOYS a standard (I4 Key) Boehm Fingering system. Normal sax fingerings are used, plus there are two trill keys for trilling any note up one-half or one-whole step. The left thumb controls the five octave keys which, when combined with a clever set of alternate octave fingerings, give the instrument a range of seven octaves. As I mentioned earlier, I found this system to be quite natural with only two exceptions: five octave keys take time to adjust to, and the technique necessary for playing voices with short envelopes (ie. harp, pizzicato strings, acoustic guitar) is a little unnerving. If your fingers aren't moving together exactly, extra notes are generated.

The two sets of key shims, which are included with the unit, are designed to

More Basics

THE BRAINS OF the WX7 reside in what would loosely parallel the barrel on a clarinet. In the product photo, this is the wide part of the body with the Yamaha WX7 logo on it. On the bottom of this "barrel" is the performer's access to most of the controls necessary for customizing the instrument to his/her style of playing. These controls consist of four rotary pots and eight DIP switches (if you've ever looked inside a computer, you will be familiar with these – they're little On/Off routing switches). All twelve of these are recessed into the body of the WX7 and are protected by what is (in light of all the attention afforded the WX7's design) the "cheesiest" solution to a problem I've seen from Yamaha. The "protection" is a small rubber strip which, after initially opening, is next to impossible to re-insert in its original position (I've managed it only once in three weeks). Also, the DIP switches and rotary pots are the (à la Roseanne Rosannadanna), "Eensy-Teensy little cute things" that are adjusted with this "Eensy-

Controls *"All twelve controls are recessed into the body of the WX7 and are protected by what is the cheesiest solution to a problem I've seen from Yamaha."*

assist in customizing the instrument to the individual player's technique, and are an attempt to resolve some of the problems mentioned above. It's a nice try, but a fairly primitive solution. The shims are difficult to position, and once installed, are almost impossible to reposition. A split key system with adjusting screws would have been much better.

Three other functions of the WX7 should be discussed under the general heading of "technique." First, there is a pitch-bend wheel that is operated with the right thumb and works quite well. A

Teensy cute little screw driver" which, when not in use, is stored in its "Eensy-Teensy-Tiny little screwdriver holder," which is mounted on its MIDI/power cord. This is all very clever *and* cute, but as a player, I would much prefer larger controls that didn't necessitate a screwdriver for adjustments, especially on an instrument which, to take full advantage of, you might constantly be readjusting.

Critical enough? Good, because these are the only design features on the WX7 that I have any problem with. The eight DIP switches control the following, in ▶

ALTHOUGH STEVE REICH used to do a lot of music with electronics and tape, today he is generally perceived as a composer concerned with writing acoustic music for orchestras, his ensemble and instrumental virtuosos. He does work the synthesizer into some of his scores, and he is currently using a Macintosh Plus computer, but as recently as four months ago when I first interviewed him, he had a strange distaste for the higher forms of technology.

"Yes," laughs Reich, "that's accurate. But time changes. I don't know if I had the Macintosh when you were here before, but they grow on you. Basically I loved it, I hated it, and now I'm getting back to it and a lot of things."

But getting back doesn't mean going backwards, even though Reich has been one of the most influential composers of the last 20 years. "I'm delighted in general that Fripp and Eno and Bowie have gotten something out of this music," he exudes. "When I was 14 years old, I was listening to Kenny Clarke and Miles Davis and later John Coltrane. If in my late '30s and '40s I can be of interest to an Eno, Bowie, Fripp, or The Talking Heads - well, that's the way it should be."

Ask Mark Isham, David Byrne, Brian Eno, Michael Hoenig, members of Tangerine Dream or Laurie Anderson to name one artist who has had an impact on their music, and Steve Reich's name comes forth with an inevitability that's like his own music.

It's a music marked by an internal logic of form and movement. Spinning, intertwining lines of sound evolve with unerring precision and perfection through orchestral permutations on 'Music for 18 Musicians,' 'Octet,' and 'Music for a Large Ensemble.' If you can't tell from that description, Reich is associated with minimalism and is one of the original quartet of names who, ten years ago, were mentioned in the same breath: LaMonte Young, Terry Riley, Steve Reich and Philip Glass.

"LaMonte Young had a huge influence on Terry Riley and Steve Reich had a huge impact on Philip Glass," snarls Reich. "Only everybody's honest about it except one person." He laughs bitterly. Although they played in each other's ensembles in the '60s, Glass and Reich still share an animosity towards each other.

Reich's new work is partly inspired by his music from the past, which has recently been re-released. His tape works, 'It's Gonna Rain' (1965) and 'Come Out' (1966), and new recordings of his 1967 piece 'Piano Phase' and the 1971 work, 'Drumming,' have recently been re-released by Nonesuch Records.

It was Reich who inspired many of the minimalist sub-headings that have faded into disuse: phase music, pattern music and process music. His 1968 essay, 'Music as a Gradual Process' was an influential and durable piece of theory that informed his music up through the epic composition, 'Drumming.' It's an example of less is more, brought to a wonderful conclusion.

Reich gained early renown with his tape-loop pieces, that used documentary tape recordings. For 'Come Out,' it's a black youth relating his arrest for murder by police after the Harlem riots in 1964. For 'It's Gonna Rain,' he used a black preacher. "Well, 'It's Gonna Rain' is a recording of a black preacher in Union Square in San Francisco preaching about the flood and the end of the world," explains Reich. "It's ultimately, perhaps, a very depressing and ugly piece, but therein lies its strength. It starts off with the preacher's voice saying they didn't believe it's gonna rain."

"What happens in 'It's Gonna Rain' in the first movement is that the loop starts out in unison with itself on two separate machines," explains Reich, "and gradually one machine moves ahead of the other, controlled by my thumb, to some extent, until finally it's out of phase. So you hear 'it's gonna, it's gonna, it's gonna' and 'rain, rain, rain,' and then it begins to slide out of that so it's back in unison, at which point that movement is over and then another movement begins." Reich kept re-working the loop into a wash of phase shifted sound. "That's the part that really gets pretty bleak," he confesses.

Within the un-synchronized loops, Reich found a wealth of rhythmic and perceptual changes. Phase shifting patterns occurred, and the delays created a maze of polyrhythmic designs. He took the same processes and applied them to acoustic instruments with 'Violin Phase,' 'Piano Phase' and 'Clapping Music,' scored for four hands clapping. These were rigorous, ascetic experiences, with performers playing the patterns against each other on pre-recorded tape. They unfolded with seemingly relentless precision that left little room for emotion or expression.

"The early pieces are never going to be widespread," admits Reich. "They are in a sense 'radical etudes.' Radical for obvious reasons, etudes because they examine a certain technique. If a player wants to play in my group or wants to play my music I always say to them, if they're a percussionist or a keyboard player, they can play 'Piano Phase.' If you can play that, the rest of it will be easy."

Reich brought his work to relative popular acclaim with 'Drumming,' an epic, four-movement work that brought to his phase techniques a concern with additive processes that could be seen. He wrote clean, simple lines for percussion instruments and voices singing vocalise, that revealed developmental processes of the music – like opening up the inside of a music box. It was simple in design, and

intricate in realization.

Coming as it did in 1971, when electronic music was beginning to go into full gear, Switched-On Bach was a hit and Terry Riley was doing his tape-loop improvisations on A Rainbow in Curved Air and Poppy Nogood and the Phantom Band, 'Drumming' was an anti-technology statement.

"'Drumming' and 'Clapping Music' are done with primitive instruments," asserts Reich. "There's a sort of gesture to the music which is not only defending so-called primitive musics and primitive societies, but it's also kind of asking for re-evaluation of electronics and electronic music as well."

Rather ironic when you consider that he was a strong influence on Eno's tape-loop works, and that the whole concept of repeating overlapping sequencer patterns à la Tangerine Dream, Mark Isham, and Mike Oldfield is inspired by works like 'Drumming' and 'Come Out.' Reich himself hates the concept. "I think tape delay is a drug," he states. "It's a cheap trick. I think tape delay should be thrown down the garbage chute. Anybody who has done it has produced nothing, including Terry Riley, who wasted years of his life. As great as In C is, I think that Poppy Nogood and all the other stuff is cheap caramel crap."

'Drumming' was an eloquent testimonial to this point of view, a four-movement

suite of precision percussion patterns that, like the loop pieces, gradually move out of phase with new patterns emerging from the bottom and rising to the top. Much of it was inspired by African music, particularly the drumming of Ghana. In 1962, composer Gunther Schuller alerted Reich to a book called *Studies In African Music* by A.M. Jones.

"What I saw were repeating patterns in what we would call 12/8, superimposed so the downbeats don't coincide," he explains. "And that was very very revolutionary information. I had heard African music on recordings. I knew it swung. I knew it was made with drums. I knew that people danced to it. But I didn't know how it was put together. And to see that notation was really the major awakening to African music. There was an emotional aura around it that said things like, 'Yes, percussion can be the dominant voice in the orchestra. Yes, percussion can be a more complex, interesting sound than electronically-generated sound.' Go ahead, do it!"

Throughout the '70s, Reich expanded on the concepts of 'Drumming,' moving to larger ensembles, employing more orchestral instruments. 'Music for 18 Musicians,' 'Octet,' and 'Music for a Large Ensemble' were signpost works that saw Reich maturing as a composer. Works like 'Music for 18 Musicians' and 'Octet' had a feeling

of being simultaneously fast and slow.

Altering perceptions of speed is something he did as early as 'Four Organs,' recorded with Reich, Philip Glass, Michael Tilson Thomas and Jon Gibson playing the organs. "'Four Organs' takes an eleven-beat phrase and turns it into a 256-beat phrase over a period of 20 minutes," reflects Reich. "It's called augmentation. It enables the desire for a slow movement to happen when at the same time the tempo is moving right along. If you choose to listen to the violins in 'Octet,' you will have the feeling of a very slow and spacious time, which has a little animated undercurrent but which is moving very slowly. But if you put that in the background and the pianos and woodwinds in the foreground, then you're really scurrying right along and there's a slow underpinning for that fast motion."

DESPITE COMPOSING FOR larger groups and orchestras around the world, Reich still maintains his six-piece performing ensemble, Steve Reich and Musicians. Minimalists bucked the trend of American academic music in which composers didn't dirty their hands by playing the music. Reich, Glass, Riley and others all went out on the road, performing in their own ensembles or as solo performers. "When the ensemble was formed in the beginning," he recalls, "it was

formed because I wanted to try our pieces. There was no one in the world except my friends who were interested, so I called my friends and got together and played them. That was the way the ensemble began."

In its own way, that was as important as the advent of synthesizers. It wasn't just the fact that no orchestra would play this music in the '60s and '70s. It took this music out of the classical world and brought it to a cross-cultural, cross-generational audience. Reich gets the vindictive juices flowing when he thinks of the classical establishment. "We were living in a world of academic hacks," he explodes, "people who wanted to pretend that they were living in turn-of-the-century Vienna or pretend that they were living in post-war Cologne, so that they could write twelve tone and serial music. That music was beautifully and persuasively written by Schoenberg, Berg and Webern and still is being carried forth by Boulez, Stockhausen and Berio. All of whom are composers I have enormous respect for, because they are genuine products of their time and place. They all give you true musical information about what it was like to be alive at a certain period of time and a certain place in the world, with a certain tradition, of which you are a part. Those musical liars who pretended to be in the same situation in this country are worthless, and I was living ▶

► surrounded with people like that. So of course I made a very big break with that because it was such an unbelievably unhealthy situation here."

Now Reich is part of the establishment, with an exclusive recording contract with Nonesuch records, orchestral commissions from around the world, and constant demand for his ensemble. This winter, Zubin Mehta and the New York Philharmonic will perform his newest orchestral work, 'Four Sections.'

Even while composing larger scale works, Reich has also composed for solo musician and tape in a series of counterpoint works. It began with 'Vermont Counterpoint,' composed for flautist Ransom Wilson. Like his earlier 'Violin Phase,' these works consist of pre-recorded lines, against which the soloist plays a live line. He's now composed three – 'Vermont Counterpoint' and 'New York Counterpoint' for clarinetist Richard Stolzman, and 'Electric Counterpoint' for guitarist Pat Metheny.

Although Metheny is a jazz player, it was a strictly composed piece. Reich had been approached several times to do works for classical guitarists but declined until Bob Hurwitz, who runs Nonesuch Records,

suggested the union with Metheny. It was premiered at Next Wave Festival at the Brooklyn Academy of Music in November and will be released on record sometime in 1988.

"On the recording the big plus is the way he played the piece," enthuses Reich. "A classical guitarist may have read it a whole lot faster, but no way it would've sounded the way he makes it sound. It's a real hand-in-glove between obviously being a piece of mine and obviously being played by him. I think it suits his style."

One of the unusual aspects of 'Electric Counterpoint' is the way Reich composed it. He's slowly been finding his way into electronic instruments and computer composition, and 'Electric Counterpoint' was sketched out using his Casio FZ1 sampler and the Macintosh. "I used the sampler for composing," admits Reich. "I used the Mac, the Professional Composer and Professional Performer, which I hadn't used before. I had some good guitar samples in the FZ1, so I made the tape that Pat used to learn the piece in addition to the notation. He preferred having the computer disk of the piece along with the notation."

Pat Metheny is no stranger to technology, being one of the pioneers of the Synclavier Guitar, and an eloquent and knowledgeable spokesperson for it at that. But Reich does some mental gymnastics to go from his acoustic stance to embracing technology and computers and reconciling the two. It's been a gradual seduction that has come more from practical considerations than artistic dispensation.

"I have no interest in synthesizers," insists Reich. "I've used them as instruments of convenience. When I wrote 'Sextet,' I heard oboe and English Horn playing those lines, but I said, 'Uh-oh, that's two more players, and that's four more players – let's just use synthesizers."

Then there was the chamber version of 'The Desert Music.' Originally scored for an 89-piece orchestra and 27-voice choir, Reich was faced with a reduction of forces down to around 40 musicians. To approximate the sonic impact, he employed synthesizers. "It's also an instrument to thicken textures, to double brass," he confesses. "I use it basically as an electric organ. I use them to make chamber versions of larger pieces, like 'Four Sections,' my new piece. The synths, DX7s,

would take over the brass and woodwind parts. I do that when the parts are subsidiary to and buried in the orchestral texture. When you want to hear three flutes or trumpets, you want to hear three. But when the French horns and trombones are supplying chords, where they are not heard as individual instruments, then I would have no qualms about making a chamber version of the piece, using samplers to take over those roles."

Reich uses his Macintosh to free himself from copyists and to free up some money. "Now for generating the notation I use the Macintosh and that has been a tremendous money saver," he says. "For one piece done for the St. Louis Orchestra, my copyist had to extract the orchestral parts. That original extraction cost $6000. That comes out of the commission fee, which means it comes out of my money. We went to St. Louis and I wanted to make certain changes. That was another $2000. So the parts for three movements, which is a 15-minute piece for a relatively small orchestra, cost $8000.

"The Macintosh Plus cost about $2000," he continues. "The program, Professional Composer, $200. The paper's not much. I have the hardware to generate parts for any piece I've ever entered into that computer. Once I enter the score in, the parts can be automatically extracted. If you change the score the parts are automatically changed. It's a major step forward in the whole composer-publisher relationship and the economics of getting printed music out."

But it's gotten deeper than economics. Ask Reich about his equipment and the latent techno-junkie in him emerges as he talks about devices like OpCode's Professional Plus MIDI interface, and his laser printer, "for making incredibly beautiful scores."

A sure sign that Reich is converted is his desire for more, the feeling that he wants to go beyond what the technology allows. "I may get some rack-mount samplers that Casio is giving me," he says. "Each keyboard can only generate eight voices, and when you're trying things out you can gobble up 16 voices pretty fast. By the time I finish this thing there will be 32 voices of polyphony. Remember I'm dealing with 12 string voices, not counting any double-stuff."

Now Reich is looking to use the samplers for their own peculiar qualities in a way that harkens back to his early tape loop pieces. He's planning an expansive theatre work that will be two years in the making and will include musicians, video documentary footage, and audio documentary footage played live with sampling keyboards.

"I'm interested in going back in the direction of 'It's Gonna Rain' and 'Come Out,' believe it or not," he says. "I'm not very drawn to opera. I am interested in different things in the world. My feeling is

that my way of doing anything in the music theatre will be via speech and possibly documentary video images. And possibly texts literally typed out in real time on stage on computer screens and synchronized sound all being manipulated in real time by musicians on stage. That's an idea I've had since 1980."

Reich is planning on experimenting with the documentary techniques in a new piece, the Kronos 'Triple Quartet.' "At first it was going to be a triple quartet with two Kronoses on tape," he explains. "But now I'm thinking of adding a wild card, which would also be a study for this kind of music theatre, by adding speech fragments and sound.

"One possibility is to use train sounds and voices. When I was a kid, I spent about four days twice a year going back and forth between LA and New York, 1939 to 1942. As you know, I'm Jewish, and it crossed my mind that if I had been in Europe I might've been on very different trains going to different places. I'm trying to get some recordings of holocaust survivors talking about their travel situation. And I'm getting different recordings of train sounds. I'm trying to work this in so it will be a music theatre in the abstract."

With samplers, Reich realizes he can control the sounds more precisely in real time as well as being able to control pitch, which you can't do with tape processing. He's had a piece called 'Slow Motion Sound' in mind for several years that was limited by available technology. "The idea was to take a fragment of speech, repeat it and as you repeat it, slow down the speed without changing the pitch," explains Reich. "So I would be 'taaaaaaaallllkkinnnnggggg' very slowly. Just the exact equivalent to slow motion in film. This was impossible to do with tape recorders because by slowing it down you lower the pitch, because you're dealing with the waveform as an analog that's stored on the tape. With the advent of computers it became possible to do this, and in 1980, I went into IRCAM [Pierre Boulez's government sponsored multi-million dollar computer music laboratory] in Paris and actually did it using some of their computer programs written by Andy Moore, who came out of Stanford. I used members of my ensemble saying, 'My name is Nurit, My name is Bob,' etc. When I got all done with it I shrugged my shoulders and said, 'So what?' and came home."

When I suggest to Reich that his new theatre piece might be some sort of minimalist rap music or Art of Noise dance tune, he laughs. "It would use repeated fragments, but not repeated constantly," he says. "I'm trying to deal with repetition, but not in the way I did in my earlier works, because here I want to integrate it with musical instruments in an overall instrumental speech. Its pitch and the timbre, in so far as it suggests analogies to

instruments, will suggest a lot of the music. I have to get my documentary sources in the sampler and laid out in order to be the basis of the piece. The sources will dictate the music rather than the other way around."

Besides speech, Reich is already obtaining samples of train sounds, and again, they harken back to his early music with tape. "You may know that railroad warning bells phase naturally," he laughs. "That's an example from 1968 when I wrote that essay. The piece may begin with an emblematic warning bell. Railroad whistles – I've also noticed that European trains from that period have an ominous overtone if you use several of them at different pitches. Here in this country they're very upbeat and you get Soul Train and train jazz, the rhythm of the rails, which is one world, and boxcars going to Poland which is another way."

It seems like Reich is getting himself into a semantic knot in the distinctions he makes between electronic and acoustic music, but one thing remains true. He still is interested in live performance, and the samplers give him that possibility with documentary sound. "The possibility of dealing with it via the keyboard is such a more open world musically and mechanically speaking than dealing with tape loops, that I can't say enough about that. What had taken hours takes minutes. What's more, you have the possibility, in the music theatre piece, of people being on stage and playing together, with some people playing sampling keyboards."

Reich's music can be forbiddingly clean and precise, but beneath its perfection of motion is an emotional force that is subtle, supple and profound. Using documentary sound is only another way for him to extend this power. He doesn't like the idea of actors playing historical figures. He wants to have the actual history as part of his composition. "If you pick material that is historically resonant and part of people's lives, that is part of common memory, then it has emotional resonance." ∎

Ensoniq
Performance Sampler

The company best known for producing an economical and efficient sampler has released yet another, with increased control, unique live performance features and higher quality sound.

Review by Chris Meyer.

THE ENSONIQ MIRAGE is unquestionably the best selling sampler above the Casio SKI. Being one of the first and still one of the cheapest didn't hurt; oddly enough, having relatively poor sound quality and a brick-wall user interface didn't really seem to bother it either. Fortified with an impressive (given the inherent sound quality) set of factory disks, it put a sampler into the hands of many musicians who couldn't afford any and could live with a few character faults.

The EPS (Ensoniq Performance Sampler) is the company's long-awaited follow-up to the Mirage. Ensoniq's market research has shown that the majority of users are far more interested in playing their sampler than using it. Thus, the EPS was aimed at providing as many neat and keen features as possible for those performers.

Of course, it's far easier to provide extraordinary factory performance disks if

the machine has a large set of extraordinary features. And instead of hiding access to those features (like the Mirage essentially does), Ensoniq decided to place them all on the front panel for advanced users to get at. With this (and a slightly high-end price tag for Ensoniq), the EPS starts contending for the top notch as a studio sampler, too. Is the EPS truly Everybody's Sampler?

Technical Jabber

IF YOU'RE A diehard tech head and like to pour over spec sheets to figure out what's inside an instrument, the EPS will keep you busy for a while. The EPS leans heavily on Big Science to meet its feature/price performance mark.

Biggest question – how many bits? The input and outputs sport 13-bit linear converters, giving a theoretical 78db S/N ratio. However, samples are stored in memory as 16-bit linear data. Why? When you start to do digital processing of data,

you'll want some extra bits for roundoffs and carryovers. The internal processor (a 68000) can handle 16 bits; might as well go for it. The digital oscillator chips (which also handle filtering and mixing) can handle 24 bits. Why? Filtering needs *lots* of spare bits; having more bits also supplies more headroom when sounds are mixed. Points to the EPS for going an extra mile here.

What are the sample rates? More answers than questions, here: 40 selectable input sample rates from 6.25kHz to 52.1kHz are available. Twelve of these have input filters matched to them. Which filter is used can be altered by the user, in case some under or overfiltering is desired (such a choice is an example of the whole machine – if it's in there, why not let the user alter it?). As with the Mirage, a sample may be transposed the length of the keyboard, albeit with some loss of clarity on the higher notes.

Okay – what *output* rate do you want? The EPS works on a multiplexing principle

internally. In simplistic terms, voices are scanned sequentially, with each one getting a time slot to be processed and to contribute to the final mix. How often a voice comes up to be serviced is the output rate. As in any multiplexed system, one has to trade off how many things get serviced against how often they get serviced. Unlike most multiplex systems, the EPS lets the user pick the tradeoff. Three choices are available – 20 voices at 31.2kHz, 16 voices at 39kHz, or 12 voices at 52kHz. By the way, each voice has its own filter (which we'll get to a little further on).

How much memory? The standard EPS comes with RAM enough for 256K of 16-bit words. At a typical sample rate of 30kHz, this works out to 5.7 seconds. Scanty by today's standards, but the Ensoniq sound developers managed to do wonders with the Mirage's 64K. Memory is shared with the on-board sequencer (à la Emulator II and Emax), with up to 80,000 notes fitting in the 256K. Already in existence is a two-time memory expander; in prototype form in Pennsylvania is a four-time expander that gives all the internal memory to the sequencer and has a SCSI hard disk port to boot. A fully-loaded EPS is supposed to run for just under $3000.

The operating system is disk-based, similar to the Mirage and Emax. Thankfully, the EPS doesn't need to go out to disk nearly as often as the Emax, allowing the OS disk to be removed and set aside. Also, software should be easy to update. Thankfully, there are no special density or format disks to buy either.

The EPS is currently a stereo output unit, with promises of an individual output box. This, too, will be something other than the usual – as opposed to each voice having an output, each sample can be directed to one of eight outputs, where they are submixed (the wonders of multiplexing again). At last – polyphonic individual outs that do what a user really expects.

Getting Around

ONE OF THE CHIEF complaints of the Mirage was the lack of user interface or display. The EPS does not suffer this problem.

The EPS operates in one of three "modes" – Load, Command, or Edit (with a labeled button dedicated to selecting each one). Load is obvious, it's for loading sounds. Commands are really broad orders, such as to crossfade a loop. Edits refer to tweaking individual numbers.

Fourteen "page" buttons supplement these basic modes – Instrument, Seq/Song, MIDI, System, Env 1, Env 2, Env 3, Pitch, Filter, Amp, LFO, Wave, Layer, and Track (the last 10 doubling up as a 10-key pad). Combinations of these are fairly evident, such as "Load Instrument" or "Edit Env 1" (not all combinations are valid). One then uses left and right cursor keys to view

different options in each page, which can then be altered by a data entry slider and a pair of up/down buttons. Each particular item in a page may also be "direct-dialed." Current mode and page is spelled out in the upper two lines of a custom display with a series of indicator lights; there are an additional 24 characters available for showing specific names and parameters.

I have mixed feelings about this system of editing. Whereas many of the parameters are obvious, the existence and location of some other parameters takes a little guesswork and searching. It also

Sequencer "It doesn't have the full visual editing sequencer we all seem to demand these days, but it is more powerful than most built-in sequencers and good for 'scratchpadding' songs."

seemed that a lot of keystrokes are required to get at something. However, a little memorization allows one to fly, and nothing is ever hidden. Another thing that takes getting used to is that the data slider initially works relative to the current value, as opposed to the value always jumping to the relative physical position of the slider when it's first moved. I've gotten so used to using inc/dec buttons for nudging and a slider being absolute that I often thought the slider was broken (Pavlov's dog, I guess).

A few additional dedicated buttons (Sample, Set Keyboard Range, Record, Stop/Continue, Play, Cancel/No, and

Enter/Yes) exist to speed things up even further.

"P" = "Performance"

THE MOST BALLYHOOED feature of the EPS is the ability to play sounds while loading others. Just five seconds of thinking tells you what that means live – no more 40 second monologs by the lead singer while you get ready for the next song. With a little advanced thought, you can stay one to seven steps ahead of the patch list by starting leads while playing the currently requested sound (however, if you start from scratch, loading time is par to slightly slower than competitive machines). I already can't go back. No smoke and mirrors; it works. The disk system is balanced towards making it easy to load individual keyboards for quick mixing and matching (a "load back" utility for loading several sounds at once also exists).

The second new feature Ensoniq stresses is the polyphonic aftertouch. Previously in the realm of such expensive keyboards as the Prophet t8, Yamaha DX1, and Rhodes Chroma, each key on the EPS (and its synthesizer brother, the SQ80) can be individually articulated after the ▶

► initial strike (for modulating or brightening just the root, etc). Mind you, there are only eight discrete positions sensed, but switching between them is slewed and the sensitivity is adjustable. I didn't feel any problems – even though I expected to.

The keys have a very light throw and a bit of bounce; they also click a bit on first strike. Ensoniq explains this as a fallout of stopping the key at the end of the initial velocity stroke without letting it intrude into the realm of pressure. Keeping in mind that the feel of a keyboard is an individual preference; I didn't like the feel of the keys, but both velocity and pressure are smooth in response. For those with other keyboards hanging around, the EPS's polyphonic pressure can be translated into normal pressure over MIDI, and normal pressure in works as well (over all the keys, of course). More sedate keys would take

Features *"I never thought I'd see the day that an instrument actually overwhelmed me with the sheer number of useful features. The EPS is the first."*

this from being a nice feature to a full-fledged pleasure.

The next bag o' tricks is contained in a pair of "patch select" buttons. Each keyboard's worth of sounds ("instruments" to the EPS) can have eight layers. Each layer can have anything from the same samples with different pannings or processings to entirely different samples. These eight layers may be crossfaded between by keyboard position, pressure, etc, *or* selected outright by the patch select buttons. One can suddenly switch between guitar notes and harmonics, sax honks and squeals, or whatever by just hitting a button. The word elegant comes to mind – simple but *very* useful.

Instrument selection is quick, but with several major new wrinkles. Up to eight instruments may be loaded at any one time, dependent strictly on available memory. Each one has a dedicated button to select it (these double as track select buttons for the sequencer). A row of lights above the buttons tells which instruments are loaded; a row of lights below tell which one(s) are selected. Hitting a new button twice while an instrument is already loaded layers it with that instrument. Hitting a button once while another instrument is selected brings up a whole new myriad of tricks. In essence, an instrument only comes up and covers the part of the keyboard it is mapped to. If it doesn't cover the whole keyboard, it allows the previous instrument(s) to peek through on the unused portion. The last instrument selected is the one on top. This is how splits are created. Other instruments can be layered on top of any split arrangement.

With a little forethought, some rather insane combinations can be summoned. There's a dedicated "Set Keyboard Range"

button on the front panel for altering splits, transpositions, and levels on the fly. Complex as it is, it's really quite simple to manipulate live – and with up to 20 voices, there's more than enough to go around. Combined with being able to load new instruments live into unused instrument positions . . . well, the mind boggles.

Sampling and the Like

ENSONIQ PROVIDED ME with a nice collection of sounds with the EPS; unfortunately, none were finished factory disks and very few were of "traditional" instruments (piano, strings, drums, etc) for comparison. It came time to do some of my own sampling to see how this beast fared.

As mentioned above, there is a dedicated button for summoning up sampling mode, with 40 sample rates and 12 input filters to choose from. Unfortunately, sample length is *not* selectable – you always get all the available memory, whether you wanted it or not. Sounds can of course be trimmed and truncated later, but I like to do all my sampling as a batch before doing any editing. A nice feature to balance out my gripes is a sample rate convert routine, for saving memory by downshifting a sample to a lower sample rate after it was taken. This is a relatively new feature just now appearing on high-end samplers (eg. EIII) and visual editing packages. One other nice touch that Mirage owners will appreciate is that their existing library of sounds can be used with the EPS, and they'll play with better fidelity. All you have to do is use the convert routine that's included in the EPS.

The EPS is lacking an input level adjust, but line or mic preamplification may be selected. The display turns into a bargraph meter, with an additional asterisk showing the threshold the sample has to cross before it begins recording (at least, in theory – the preliminary software revision I had insisted on starting as soon as I hit "enter", regardless of the threshold). An excellent feature (appearing on more samplers) is setting a presample buffer – the amount of sample remembered before the threshold was crossed. Sometimes this is the only way to catch a sharp attack transient. On the EPS, this can be adjusted from 0-127msec. A "C" at the right end of the bargraph indicates clipping. The input signal is passed through to the output, and really should be trusted over the clipping indicator – I heard severe clipping without the "C" ever lighting up.

After the sample has been taken, the EPS immediately asks you for the root key

of the new sample. If more than one sample exists per layer per instrument, it automatically switches from one to the other at the midway point between the two adjacent root keys. (One less thing to set, true, but one less thing to tweak if need be. I personally find it necessary rather often because samples tend to transpose better downward than upward.) One can then go over to the Edit Wave page to trim up and loop the sample.

Only one loop per sample is provided (several samplers offer more, but this rarely gets exploited), with several modes (forwards only, bidirectional, and exit upon release). The EPS has an autolooping function that the preliminary manual suggests leaving always on, but it took several seconds to find each loop point, with results inferior to simple zero crossing detectors in the likes of my ancient Prophet 2002. Also, no such detectors seem to be available for trimming the start and end. This kind of points towards a need for visual editing for good trimming and looping (and indeed, Alchemy by Blank Software has already been announced). Loop points may be set down to fractional samples. The EPS interpolates finer points between samples to cut down on distortion in its multiplexing circuitry, and exploits this for matching loop ends.

Six types of crossfade looping are available that can be executed with defaults or tweaked by the user. Unfortunately, the preliminary manual I had didn't cover these at all, so I was left guessing as to their differences. In general, the crossfading seemed as smooth as any I've used so far. If there's enough memory in the machine, the EPS keeps both old and new versions of the sound around for auditioning – a *very* nice touch.

How does it sound? Pretty good, really. The disks Ensoniq provided were very sparkly, if not exactly clean and crystal clear. My own listening tests comparing it to my trusty Prophet left me split – the EPS adds some bright haze (caused by distortions in the multiplexing) which made some samples actually sound warmer. The bandwidth is certainly there, but clarity is suspect. The EPS definitely has a sound of its own that *I* happen to like – but don't look here if you're searching for complete transparency.

Filters and Modulations

THE FILTER SECTION in the EPS is another pleasant innovation. The instrument actually has a pair of filters in-line per voice that can be set as a pair of 2-pole low passes, a 1-pole low pass and a 3-pole low pass, a 3-pole low pass and a 1-pole high pass, and a 2-pole low pass and a 2-pole high pass. Each filter can have its own cutoff and modulation depths. They sound very good – cleaner than an analog counterpart while still retaining the flavor.

60

The only bummer is the lack of resonance.

The envelopes are innovative too. Five breakpoints may be set before the sustain point and two afterward. The second release stage is used to mimic reverb effects by setting a longer or shorter release after the envelope has decayed to a certain level. Does it work? Twice the same disk had me reaching to turn down an effects return on my board that was already off. Better still is that you can define two sets of break points per envelope – one for the lowest velocity, and one for the highest. The EPS crossfades between these two at velocities in between. The voice architecture incorporates three envelopes overall that can be assigned where desired.

Other common (an LFO) and advanced (random pitch variations) modulations exist. To be frank, I didn't get to try them all out, mainly from the lack of a manual to see what was there. However, I'd put up the house in saying you won't be lacking.

Provisions on the back panel are provided for both a footswitch and a voltage pedal – again, more gestural control, emphasizing the "performance" slant of the machine. The footswitch can also start and stop the on-board sequencer.

Sequencer, MIDI

THE ESQI WAS a boon to starting musicians and home recordists in that it had a sequencer built in. The EPS carries on its brother's tradition by including a rather workmanlike one itself. Up to 80 sequences (existing separately or chained into a song) may be recorded, each with up to eight tracks corresponding to the eight instruments on the front panel. An instrument can contain no sounds and just transmit over MIDI; in this way, both external synths and internal sounds can be driven by the sequencer, and the EPS can serve as a master keyboard. Using the flexible disk system to load new instruments into the onboard slots is a nice way to try out different orchestrations, too.

Other features of the sequencer include changing autocorrect after the fact (down to 1/32 note triplets), step editing, and individual level adjustment per track/instrument. Not exactly the full visual editing sequencer we all seem to demand these days, but more powerful than most built-in sequencers and good for "scratchpadding" songs.

In checking out its MIDI capabilities, I was again thwarted by the lack of a complete manual. What the manual does cover is all the variations on the basic MIDI modes in the EPS. Included are a pair of mono modes, with one suited for guitar synthesis work (with mappings of global parameters, for whammy bars and the like). Ensoniq tends to be on the front

edge in depth of MIDI implementations, and the thoroughness of the EPS seems to be carried over to its MIDI implementation, too. One other point worth mentioning is that the EPS is multitimbral, allowing you to access up to all eight instruments simultaneously over MIDI.

Conclusions

GRIPES FIRST: THE keyboard was a little too bouncy. The sounds, manual, and operating system I was provided with were all preliminary, making it impossible for me to check out everything this machine has. The editing interface was as often frustrating as it was intuitive (I hate memorizing things). And for being

trumpeted as having "twice the resolution of a 12-bit sampler," its sound merely put it in the middle of the 12-bit pack.

Now to the other side. I never thought I'd see the day that an instrument actually overwhelmed me with the sheer number of useful features. The EPS is the first. For live performance, I haven't seen a quicker to use or more expressive sampler. If Ensoniq manages to deliver on their sound disks and keep the machine growing, it's a real winner. ■

Once upon a time, Southworth Music Systems invented the JamBox/4™. Never before had a synchronizer done so much and cost so little. Not only did it let you SMPTE lock your MIDI sequencer to tape, but it let you position anywhere on your tape and lock up in less than a second, and stay locked for hours. As if that weren't enough it came with a built-in MIDI merger that let you record four MIDI instruments at the same time. And it let you filter out the MIDI you didn't want.

Everyone said the JamBox would only work with a fancy professional tape deck. They were wrong. It worked great with any tape recorder, even a home VCR.

But, alas it only worked with the Apple Macintosh™. The people using Performer™, and Q-Sheet™, and Cue™ and MidiPaint™ were all happy. But the people using the IBM PC, Commodore, Atari and hardware sequencers were all sad because they still had to spend thousands of dollars for a sync box that couldn't do nearly as much as the JamBox.

This made the people at Southworth sad too. So they worked night and day in their workshop to find a way to make a new JamBox that could work with any computer or hardware sequencer. They invented the JamBox/2. And it cost even less than the JamBox/4.
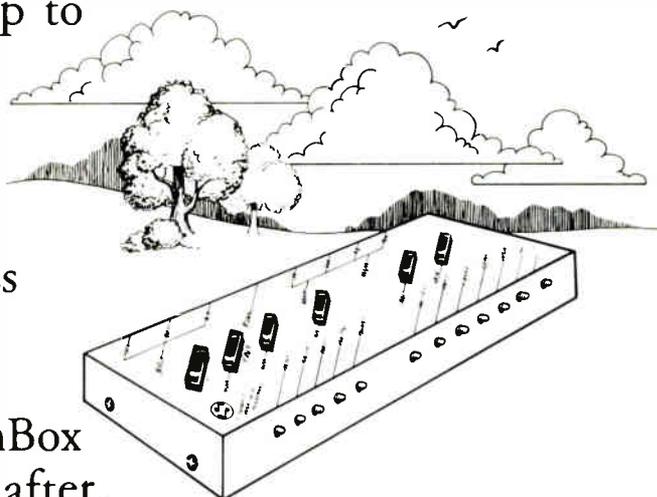
Pretty soon everyone had a JamBox and they all lived happily ever after.

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COMPUTER NEWSDESK

PC SAMPLING

For those PC owners interested in experimenting with basic sampling utilizing the capabilities of their computers, Covox has announced the Voice Master PC Digitizer. The mini-sized plug-in board attaches to any available slot in IBM PCs, XTs, ATs and
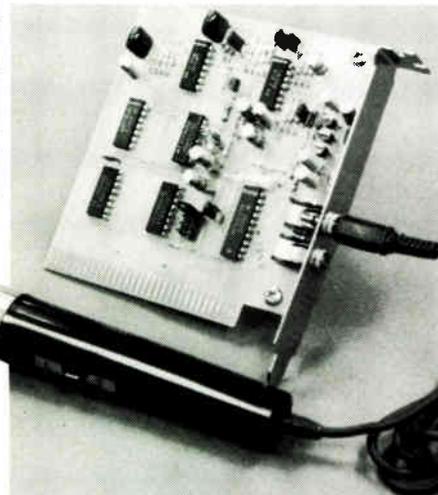
compatibles. The board contains a pre-amplifier and an eight-bit A/D converter, and offers sampling rates of 0.5 to 15K. When used with Covox's Speech Thing D/A converter, speech and sound can be heard from RAM or software. Speech recording and recognition software can be used together for a two-way verbal exchange with the computer. The system, which includes a microphone and software, is $79.95. The Speech Thing is $69.95.

Also available from Covox is the Voice Master Junior, a self-contained speech digitizer and voice recognition hardware device that plugs into the joystick port of eight-bit computers. Digitized speech can be incorporated in BASIC programs and played back without the Voice Master Junior. Included is the Covox Composer Program, a software package that allows the user to compose music by "merely whistling a tune." The score can then be edited, saved or printed out. The price? A whopping $39.95.
MORE FROM Covox Inc, 675 Conger Street, Eugene, OR 97402. Tel: (503) 342-1271

MUSIC QUEST ACCESSORIES

Registered owners of the IBM PC-based MIDI Starter System may be interested in the new Programmer's ToolKit option, designed to simplify programming the system. Included are a technical reference manual and software utilities

providing an assembly language interface in source code to facilitate use of the card. The Programmer's ToolKit is priced at $19.95.
MORE FROM Music Quest, Inc, 1700 Alma Drive, Suite 260, Plano, TX 75075. Tel: (214) 881-7408

FREEBIE!

Once in a rare while, someone comes along with benevolent intentions (and marketing smarts) and offers something free for the asking. Such is the case with Advanced Software and their D50 librarian editor program for the Apple II+, IIe and IIGS. Included on the disk is information on their nifty pitch-to-MIDI program, "Sound, Song & Vision," just in case you're interested in the other things they have to offer.

The company is charging $2 to cover diskette and mailing charges.
MORE FROM Advanced Software, 18520 Vincennes #31, Northridge, CA 91324. Tel: (818) 349-9334

SOFTWARE FOR THE COMMODORE

SoundWare has announced the release of their new series of music programs for the Commodore 64. Now available are the Passport Sequence Editor, allowing step-editing of the MIDI 4+ and MIDI 8+ sequence files; the Studio One Editor for use with Syntech's Studio One program; the DX21/27/100 Librarian to store banks and individual voices from Yamaha's four-operator FM synthesizers; the Juno 106 Librarian, which includes a random patch generator; and the Generic Librarian, a 32K System Exclusive recorder.

All of the programs list for under $20.
MORE FROM SoundWare, PO Box 1913, Nederland, TX 77627.

JUST CALCULATIONS

Now that you've heard all about Apple's astounding Hypercard (see review in MT November '87), here's a cheap way to find out what it can *really* do. This opportunity comes in the form of the first (as far as we can tell) musical application for Hypercard: SoundScape Production's Just Intonation Calculator, a handy program which works out JI ratios for you. The program also provides Yamaha Tuning Unit (TU) values for Yamaha's DX7II and TX81Z, making it easy to implement tunings you come up with. The JI Calculator program also allows you to transpose into any key, each time displaying a new set of ratios so that the most useful chords may be identified.

Like other HyperCard stacks, the JI

Calculator program can be incorporated into the HyperCard environment along with other stacks. JI Calculator is shareware – that is, Soundscape asks that you send $10 if you find a use for it. In fact, they encourage you to copy the program and circulate it among your friends. Registered owners will be entitled to free program updates.
MORE FROM Soundscape Productions, PO Box 8891, Stanford, CA 94309.

TIRED OF YOUR MOUSE?

Tired of trying to find enough room to scoot your mouse around on your desk? Then check out the new "post-mouse input device" from Lightgate, Felix. Among the advantages listed by the manufacturer are higher resolution ability than that of the mouse, relief from "mouse
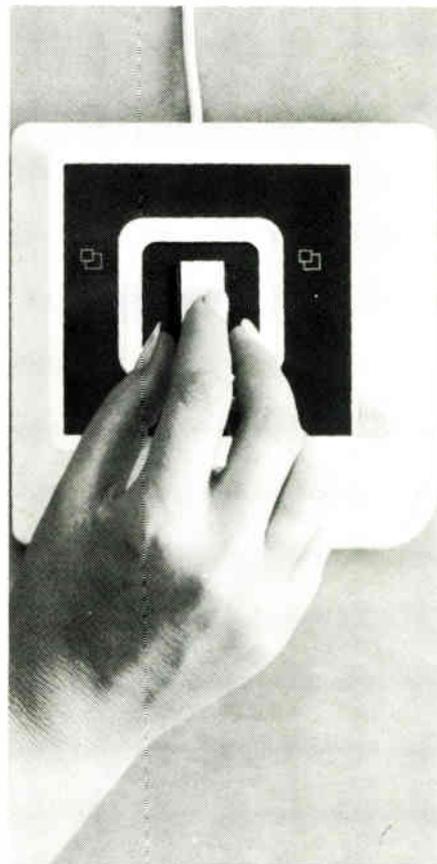
elbow and mouse shoulder," and "room on your desk for the rest of your life."

The unit is basically a solid base with a two-inch high switch which maps one-to-one with the edges of the screen. The Macintosh version is $149; the IBM, $199.
MORE FROM Lightgate, 6202 Christie Avenue, Emeryville, CA 94608. Tel: (415) 596-2350 ■

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C O M P U T E R

Intelligent Music's M

Interactive music composition package for the Atari ST.
Review by Bob O'Donnell.
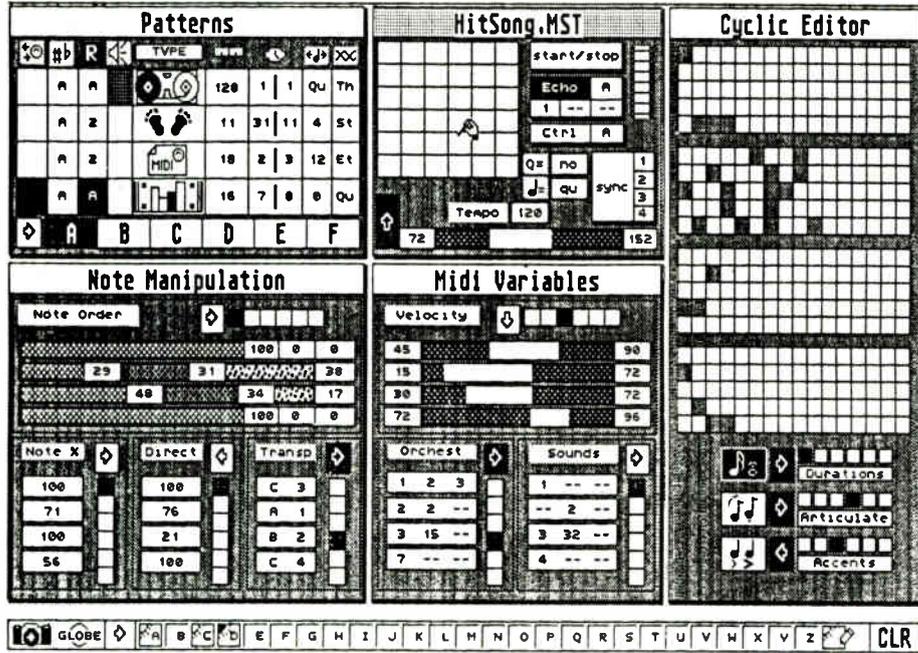
they take a "photo" of the screen's settings – and these too can be recalled at will. Finally, an entire performance of manipulations can be stored as a Movie. These Movies can, in turn, be converted into MIDI Files and transferred over to sequencer and notation programs which accept them for further work.

The biggest difference between the Mac and ST versions is the screen layout. M has one basic page from which all operations are performed, and the ST version allows most of the editing and data manipulation to occur on this basic page without opening up other windows (as you must on the Mac version). Consequently, the program is easier to look at, easier to initially grasp and, I think, easier to work with. The only complaint I have is that the Cyclic Editor grids could use the little numbers that surround them on the Mac version; they're a bit hard to comprehend without them.

Other improvements to the ST version include the ability to assign separate MIDI record and play channels for each pattern; the addition of a real-time direction control, which affects the probability of the notes in a pattern being played back in the same direction in which they were recorded; increased step editing capabilities; the ability to adjust the values of each of the blocks in the Cyclic Editor grids; and other more subtle enhancements. A representative from Intelligent Music mentioned that many of these additions will be incorporated into the soon to be released version 2.0 for the Mac as well as the forthcoming version for the Amiga.

Nothing comparable to M is currently available on the ST, and if you're interested in exploring the possibilities afforded by computer-assisted composition, you owe it to yourself to check out M. It's really something else. ∎

COMPUTER-AIDED COMPOSITION has been part of music academia for quite some time now, but only recently have attempts been made to bring this kind of power to the general public. Dr. T's Algorithmic Composer package for the Commodore 64 was one of the first programs to offer these capabilities and then Intelligent Music proceeded to turn the MIDI world on its ear with the release of Jam Factory and M for the Macintosh. Now the company has released a new, slightly more expensive version of M for the ST, with a sleeker, easier-to-read screen layout and some control enhancements.

For those of you unfamiliar with the program, M basically allows you to create and/or record patterns of music in one of five different ways and then alter their playback in real time by manipulating a number of variables such as note length, note order, pattern length, velocity levels, articulation, tempo, and many others (see the Macintosh review in MT March '87 for more details). The computer creates variations on the notes and rhythms input into the patterns – up to four patterns can be active at once – based on the settings of these variables. Changes can be made to these settings in real time from either the computer or a MIDI keyboard and entirely different groups of patterns can be selected in the same way. The settings for an entire screen can be saved via the aptly-named Snapshots –

PRICE $200
MORE FROM Intelligent Music, PO Box 8748, Albany, NY 12208. Tel: (518) 434-4110

Resonate's Listen! 2.0

Ear Training Software for the Apple Mac. *Review by Rick Davies.*

WHEN IT COMES to evaluating music software, you have to take into account what the software itself can do and what it requires of you in order to reach its potential. Sequencers need synths, and sample editors require samplers. What a pleasure to work with a package that is as self-sufficient as Resonate's Listen! ear training program for the Macintosh.

You might regard Listen! as a means of keeping your grasp on music theory on its toes; a way of pulling together theory, perception, and even your chops without a tutor. There are several varieties of exercises which test your ability to recognize and identify musical intervals, chords, and melodies, and to do so at several levels of difficulty.

Priced very affordably, Listen! doesn't even require any external equipment, though the option is there should you prefer to use your favorite MIDI controller or synth module. Otherwise, you can get along by pointing with the Mac's mouse while listening to its internal sound-generating circuits.

Each exercise consists of three parts. The first is the tone or tones that the "trainee" hears. As indicated, these may be generated by the Mac itself or by a synth module hooked up by MIDI. If you happen to have a Mac SE, you have the ▶

Sound Quest DXII Master Editor/Librarian

Voice editing software for the Yamaha DX7II and the Amiga.

Review by Stefan Lipson.
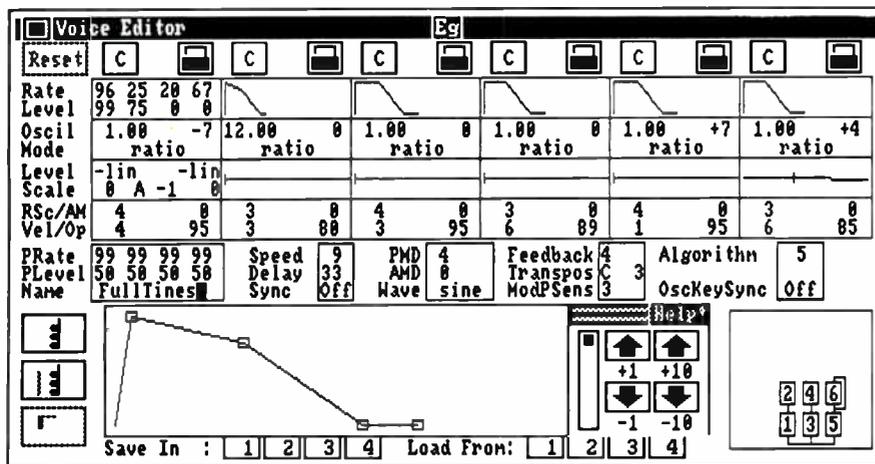
SOUND QUEST OF Toronto, Ontario, has released a good DXII editor/librarian for the Commodore Amiga. The Master E/L can be used with the DX7II, DX7S and the TX802. It can also be used for DX7, DX9, TX7 and TFI voice and voice bank data. The software is mouse driven, allowing you to select and edit options with a click of the mouse button. Help screens are available at each menu level, so if you need a reminder about how something works, you can get an on-screen explanation.

The Master E/L interface is straightforward; the user accesses the available options through a number of different windows. The Voice Editor window, for example, allows you to edit your DX voices either from the computer or directly from the synth. If you edit from the synthesizer, the visual display is automatically updated. In addition, the voice editor keeps track of changes made in the current editing session by displaying the altered parameters in a different color. If a parameter is displayed in blue, it has not been changed. If it's displayed in black, the parameter has been changed. It's a simple feature, but it lets you keep track of edits, allowing you to undo them if you so desire. The software also includes a graphic display of your envelopes.

The Master E/L lets you do group edits by placing a particular set of patches in a drawer. Thus specified, all of the members of the drawer are edited simultaneously, not as single entries. Random generation of parameter values is also included, such as a random algorithm selector and the addition of a random amount of dissonance. In short, the system lets you randomly generate new sounds. Probability and statistics say that an infinite number of monkeys at an infinite number of typewriters, given an infinite amount of time, will eventually reproduce all of man's greatest literary works. While most of us don't have an infinite amount of time to get a good new synth sound, this is still a feature worth playing with. Another nice feature of this program (and all of the other Sound Quest E/Ls I've seen) is the QuickSend utility. QuickSend allows you to send system exclusive data to your synthesizer without having to load the actual application (ie. the librarian) itself. It definitely speeds things up a lot.

If you attempt to access more memory than is available on your system, the Master E/L looks out for you and instead of crashing (like some software for the Amiga), it lets you know your status. Master E/L requires 512K of RAM, but more memory is recommended. ∎

PRICE $175
MORE FROM Sound Quest, Inc, 5 Glenaden Avenue East, Toronto, Ontario, Canada M8Y 2L2. Tel: (416) 234-0347

▶ option of using the audio output to drive external speakers, and the quality of the 20 available sounds is quite usable, though I doubt they'll make hits out of any skate-thrash tunes.

The second part of any exercise is the way in which you answer each test. If you have a MIDI controller, then you might prefer to use it. My guitar controller was feeling a bit temperamental at the time I tested Listen! so I opted instead to use the program's keyboard and guitar fretboard displays to respond. Although I also found that this kept my hands on one set of controls (the Mac keyboard) instead of two (the Mac and the MIDI controller), Listen! does allow you to assign certain MIDI events (for example, Note messages) to the Start, Repeat and Next controls, which makes for a simpler session.

The third part of an exercise is the program's feedback to your response. This comes in the form of a happy face (not the generic kind, fortunately) when you're on the button, and a frown when you're off. During the "melody" exercises – in which you hear a series of notes and then have to play them back in the right order (a bit like a game of Simon) – the program indicates which notes you have entered correctly with check marks, and incorrect notes with X's which are under- or over-lined to
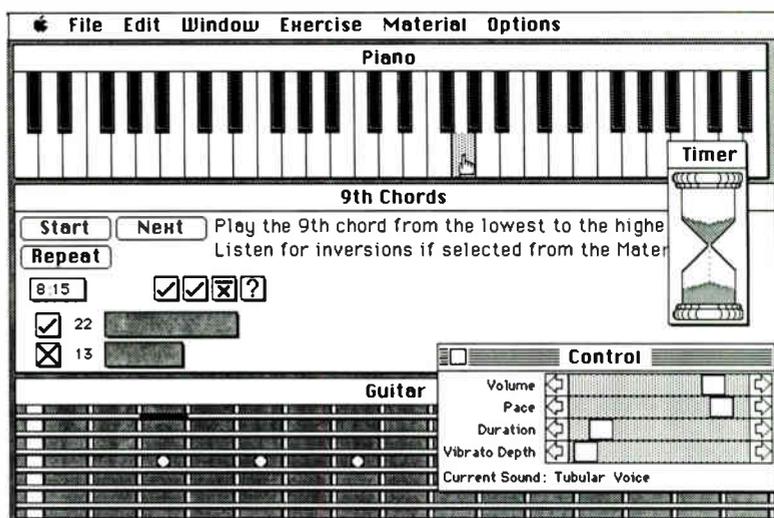
indicate whether it was too high or too low.

The rest of the program fine tunes the exercises to your abilities and current mood. You can select a notation window to display the notes you hear, which can help you develop your ability to identify intervals on paper. The "Materials" menu lets you select the key, scale, and starting note of each exercise among other things. In fact, Listen! provides you with plenty of user options which make the program a lot

easier to get along with.

Listen! is also very easy to get up and running, and after spending hours with the program I can only suggest that anyone who wants to improve their listening skills should 'Listen!' and get on with it. ∎

PRICE $99
MORE FROM Resonate, PO Box 996, Menlo Park, CA 94026. Tel: (415) 323-5022
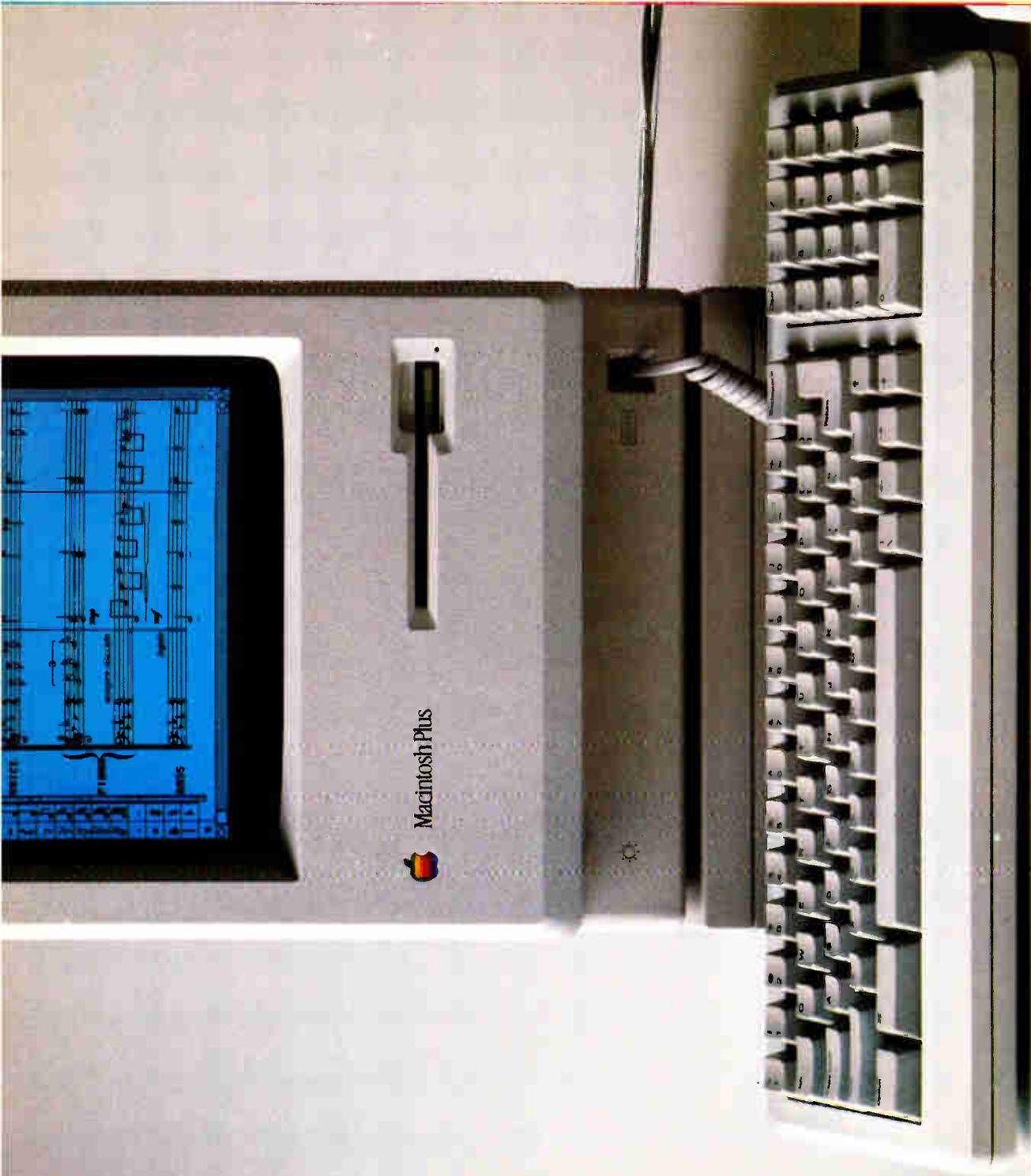
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You'll also get the performance of a rhythm machine, too. That's the power of the new Roland MT-32 MIDI sound module ("MT" as in Multi-Timbral and "32" as in 32 voice). An incredibly sophisticated sound allocation scheme in the MT-32 is structured to give you the performance of eight polyphonic MIDI modules (each capable of playing a different sound) with up to 32 voice polyphony *plus* a full set of 30 percussion samples — all of which can be accessed through MIDI computer software, a MIDI sequencer or controller.

Equally impressive is the quality of the sounds produced by the MT-32. All of the 128 preset patches and 64 user-programmable patches are created through LA synthesis — the same synthesis technique used in the Roland D-50 (voted the Technological Innovation of the Year by *Keyboard* Magazine readers). Like the D-50, the MT-32 features 128 PCM digital sound samples, combined with digitally synthesized partials, and built-in digital reverb effects.

The preset sounds are arranged in Sound Groups including several different instruments and timbres from each group: Piano, Organ, Keyboard, Bass, Syn-Bass, Synth 1 & 2, Strings, Wind, Brass, Syn-Brass, Mallet, Special Inst., Percussion and Effects. But don't expect just *any* preset sounds until you hear what the MT-32 can do. Experience the breath of the flute, the bite of the brass voices, the chop of the bow as it moves across the strings — the kind of nuance that gives each patch life other digital synthesizers simply can't touch.

The power of the MT-32 really comes through when you combine these voices together under sequencer control. It's almost hard to believe the sheer amount of simultaneous sound the MT-32 is capable of producing — literally like adding eight synthesizer modules plus a rhythm module to a set-up. But fortunately, to get this much sound, you only have to buy one. And with a suggested retail price of just $695.00 that's not too hard to do. See your Roland dealer today.

RolandCorp US 7200 Dominion Circle, Los Angeles, CA 90040 (213) 685-5141.
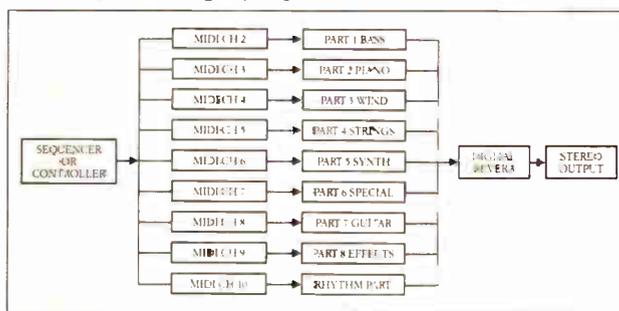
MT-32 MULTI-TIMBRAL CAPABILITIES

MIDI CH 2	→	PART 1 BASS
MIDI CH 3	→	PART 2 PIANO
MIDI CH 4	→	PART 3 WIND
MIDI CH 5	→	PART 4 STRINGS
MIDI CH 6	→	PART 5 SYNTH
MIDI CH 7	→	PART 6 SPECIAL
MIDI CH 8	→	PART 7 GUITAR
MIDI CH 9	→	PART 8 EFFECTS
MIDI CH 10	→	RHYTHM PART

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Hybrid Arts
EZ-Score Plus

The first in a series of planned scoring programs for the Atari ST family of computers, this package features extensive editing functions and compatibility with the company's sequencing programs. *Review by Aaron Hallas.*

ARE WE BEING replaced by computers? Well, I don't think so, but they certainly are having a major impact on our lives as musicians. Thanks to them, our instruments are smaller, cheaper and better sounding than ever. Computers themselves are also getting smaller, cheaper and faster. Plus, there are a lot more software companies supporting MIDI these days, including Hybrid Arts, who have long supported Atari computers in the music industry. The latest challenge accepted by the company is to produce a series of Desktop Music Publishing programs for the ST computers.

OVERVIEW

EZ-Score Plus is the first in the MIDIScore series of professional composing/scoring/printing programs. It is designed to be a music transcription program for the Hybrid Arts line of sequencers, although it will stand on its own as a music scoring/editing program. EZ-Score Plus files will be upwardly compatible to MIDI-Score, which is Hybrid Arts' planned professional scoring program. An added feature of EZ-Score is the ability to export sections to DEGAS (a drawing/painting program for ST computers) files for additional editing or for importing into desktop publishing programs and some word processors. The finished score can be printed out on Epson-compatible dot-matrix or laser printers in draft mode or final mode.

Various ways are available to create a score using EZ-Score Plus. One method is to use the mouse to place music symbols onto the screen. Another is to use key commands and the cursor keys on the ST keyboard. You can also map the controls of any MIDI keyboard to perform cursor positioning and editing functions. You then use the MIDI keyboard to step-enter the notes. Last, you can use the "Auto-Score" function to convert SmpteTrack, SyncTrack, EZ-Track or EZ-Track Plus song or sequence files into notation. This, of course, assumes that you have one of these sequencer programs to begin with. Any one or combination of these methods can be employed to suit an individual's approach to scoring. So let's take a look at the program in detail and see if EZ-Score Plus meets the challenge.

OPERATION

Being a GEM (Graphics Environment Manager) based program, EZ-Score Plus makes heavy use of the mouse, although most of the commands are duplicated on the ST keyboard. All editing is done on a single screen with dialog

boxes and alert messages that accompany functions which would require any input from you. Along the top of the screen are the requisite drop-down menus found in most ST programs. And along the bottom of the screen is a row of pop-up menus that contain all of the symbols: Notes, Rests, Ornaments, Dynamics, Articulations, Measures, and Special.

The first step in creating a score is to select your "score paper." This is done by selecting Re-Format under the Global menu, which allows you to change the screen to any of the four formats offered as well as choose the number of ledger lines for each of the staves. One of the limitations in EZ-Score comes right here. You are allowed only three staves at any one time, although the most popular formats are supported: solo, piano score (grandstaff), piano/vocal score (grandstaff with solo line on top), and trio. A series of dialog boxes in which you can set the key signature, time signature, and clefs are part of this operation. All Major and Minor key signatures are supported as well as time signatures from 1/1 to 99/64. Variable stave spacing is permitted with all formats, so multiple verses can be inserted by changing the number of ledger lines between staves – this automatically changes the staff spacing. A maximum of twenty-one ledger lines is available per staff. If you Re-Format the screen at any time, the information is only hidden, not

deleted, so that you can print out the separate parts. For example, you could Re-Format a piano/vocal score to the piano score format and print out only the piano part then Re-Format again to print out a lead sheet, all from the same score.

Once you have created your blank "score paper" you must decide on a method of input. After working with EZ-Score Plus for a while I have made some observations. The mouse is good for moving around the page quickly, selecting menu items, and for doing regional editing where you must select areas of the score by dragging the mouse pointer across the screen. The mouse is also useful in the play mode, in which case the mouse pointer becomes an index finger that can play notes or chords. It is not good, however, for placing notes above or below the staff as there is no indication as to what note you are currently at,

and the ledger lines don't appear until after you insert a note. Even with the aid of the large cross-hair that extends to the edges of the screen, placing notes in the right place is at best tedious.

I found that using the ST keyboard is best for entering notes or symbols and is, of course, the only way to enter lyrics. As mentioned earlier, most of the editing commands are duplicated on the ST keyboard, including access to all of the symbols. The up/down arrows move the mouse ▶

vertically by diatonic intervals (octaves if the shift key is held down). The left/right arrows move the mouse horizontally by a variable amount. The arrow keys can also be used to scroll through the score. Once you have mastered the key commands, this can be the easiest method of entering a score.

A MIDI keyboard is great for entering a lot of data quickly, and because you can map the controls of your keyboard to do various editing commands, it is the most flexible method. Not all commands are available from the MIDI keyboard, however, so you still need to use the mouse and/or the ST keyboard. I basically found that using a combination of these is best, and in any case, thanks to the flexibility of the program, you should be able to find a combination that suits you.

AUTO SCORE

One other method is available, and I have been saving the best for last. Imagine being able to sit down at your MIDI keyboard during one of those rare moments of divine inspiration and

levels of quantization. If you haven't already done so, it is a good idea to quantize the score so you don't end up with an overabundance of ties and rests. After you have made your selections and clicked on OK, the program will read the song from the disk, do some massive number crunching for a short while, then the score will appear with the proper beams, ties, and bar lines. The rest is up to you, so read on.

EDITING

The true test of a scoring program can be found in its editing features. Even though EZ-Score Plus is Hybrid Arts' "entry level" program, it is certainly no lightweight in this category. With over 140 symbols available and a host of editing features, you shouldn't fall short of preparing a perfectly acceptable score. If you have used the Auto-Score feature to convert a sequencer/song file into notation, then all that may be needed is to add dynamic markings, articulations, chord symbols, and lyrics. Unless, of course, you have made some mistakes while recording the song. If that's the case, you can do

playing what is, in all probability, the best song that mankind will ever know. Then imagine having your computer score it for you and print out a copy all in the amount of time that it would have taken Beethoven to ink up his favorite pen. Well, the "Auto-Score" function isn't quite that fast, but having the ability to convert song files from one of Hybrid Arts' sequencing programs is a real time-saver. If you are one who likes to arrange songs at the MIDI keyboard first, then write out the score and parts later, this program could well be worth the investment.

Presuming you have first recorded a song and saved it to disk, the first step in using Auto Score would be to create your "score paper" as described earlier. The Auto-Score dialog box will appear, allowing you to assign one track from the song to one of the staves on your screen. Provisions are made for MIDI channel selection (up to 16), high and low note limits, auto-beams, minimize ties and/or rests and five

the following: select a region of the score (only one staff can be selected at a time), then choose one of the editing options from the menu, such as Beam, Tie, Flip Stems and Delete notes. I should mention that the EZ-Score program was written based on traditional music theory and follows the rules of standard notation, so even if you are not adept at the art of scoring you will end up with a "musically legal" score.

From the Section menu you can cut or copy a section of the score (all staves) to the clipboard, create endings (up to 8), expand or compress the score to show more or less measures per screen, and clear any staff. When you choose any of these functions you are presented with a dialog box that allows you to set the range to be affected by the operation.

If you plan things out well before you start to enter the data, you can use an old trick that professional copyists use. That is, you can create a template of a section that includes the bar layout, repeat signs, notes, rests, chord symbols

and/or anything else that may be repeated in another section, make one or more copies of it, and then go back and make only the changes that are needed. If you are writing out parts for a string or horn section, this is particularly useful. Two limitations of the program I found are the inability to do enharmonic transpositions and the lack of a cut-and-paste function from one staff to another, two real time-savers when doing parts.

From the Insert menu you can locate to any

notes, which is a nice touch – except for the fact that you can't insert words where there aren't any notes. Consequently, this eliminates the possibility of having verse numbers, indications to change instruments or patches, and those funny little Italian words that we musicians have grown to love.

You will, of course, want to print out the score and it is from the Print menu that you can set the output options for print quality (draft/fast or final/slow) and the page layout – which

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Playback *"So that you may check your progress as you enter a score, EZ-Score Plus will playback the score over MIDI or through the ST's internal sound system."*

---

rehearsal mark or any measure instantly. You can also insert time and key signatures, clefs (treble and bass only), rehearsal and metronome marks, blank measures, or you can paste the contents of the clipboard to the cursor position. When building a song from scratch, the cut and paste features are a real time-saver. Inserting blank measures or the contents of the clipboard will push the rest of the score forward so you don't have to make room first. From the Options menu you can select the chord symbol and guitar symbol editors. You can have up to 20 of each defined in memory and the chord symbols are completely variable, thus permitting you to have complex chords (major, minor, 7th, 9th, 11th, 13th, suspensions, augmented, diminished, no 3rd, no 5th, etc) in your lead sheets. MIDI input and thru are selected here and a dialog box is provided for setting up the MIDI Step-Entry Map. Are you beginning to see the power of this program? WHEW!

So that you may check your progress as you enter a score, EZ-Score Plus will playback the score over MIDI or through the ST's internal sound system. If you select Options from the Sound menu you will be presented with a dialog box in which you can set the voice MIDI channel (1-16) for the staves separately for stems up and stems down notes. So, for example, if you are in the trio or piano/vocal score format you can send out MIDI data on up to six different MIDI channels. The play range can be set and if Screen Chase is on, the screen will automatically scroll to the next "screenful" of music. I found that at fast tempos on a score with a lot of notes the screen chase will pause the music to allow time for the screen to be re-drawn. You can,

includes among other things, title size and location (up to five lines), copyright notice (up to two lines), and number of systems per page. You can choose the following to be shown or hidden: Titles & Copyrights, Page Numbers, Measure Numbers, and Rehearsal Marks. I was surprised at how fast the score prints out. About five minutes per page for the final mode and a little over two minutes in draft mode. I used a Star SG10 (9-pin) and the quality was quite good. A few things I must mention, though, are that the beams do not slant in the direction of the notes, and there isn't a page preview option. The font is a bit primitive, round note heads and thin flags, but I am told that a more stylistic font is in the workings. Otherwise, the score is perfectly readable.

CONCLUSION

I was impressed with the level of professionalism in this program. EZ-Score Plus does everything that its makers claim it will do. The manual takes you through a tutorial that is clearly written, complete with examples and suggestions for efficient use of the program. Hybrid Arts is committed to supporting their products, so any updates are made available to registered owners as well as the chance to upgrade to MIDI-Score. With Hybrid's upcoming program, "HybriSwitch" you can set up a RAM disk and load up to ten programs into memory at the same time depending on the amount of memory your computer has. With a 1040ST you should at least be able to run your sequencer and EZ-Score Plus side by side.

If you already own one of Hybrid Arts' sequencers and a printer it would be a shame

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Printing *"I was surprised at how fast the score prints out. About five minutes per page for the final mode and a little over two minutes in draft mode."*

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however, choose to disable the screen chase function or set the tempo to a lower number to alleviate this problem.

The final touch is to add lyrics to your song and EZ-Score Plus will be glad to accommodate you. One typestyle is supplied on the disk in upper/lower case (others can be added). Don't look for any fancy word-processing functions, you can enter and delete lyrics only. The program does auto-center the words under the

not to have EZ-Score Plus. If you own a modem, you can download a demo version from MIDI World Music Network B.B.S. at (213) 826-4288.

I think the company's challenge has been met.

∎

PRICE $99

MORE FROM Hybrid Arts, 11920 W. Olympic Blvd, Los Angeles, CA 90064. Tel: (213) 826-3777

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getting
ON LINE

On-line computer services such as PAN and Genie have a lot to offer to MIDIophiles at every level of sophistication. Free software, sounds and information are yours for the taking, so long as you know how to get on line. *Text by Stefan B. Lipson*

IF YOU HAVE a computer, subscribing to an on-line service is an excellent way to move forward with your music and to expand your knowledge of MIDI. It's also an excellent way to learn more about computers and to increase your general productivity when working with your computer.

WELCOME ON-LINE

An on-line service allows you to use your phone as a link to a host computer which in turn links you to a variety of databases as well as other computer users. A database, in case you aren't familiar with the term, is an accumulation of data which individuals can access for their own use. The local library could be considered a database where users get information by locating appropriate books from the bookshelves. Home computer users now have access to resources that, in many ways, put your local library to shame.

Depending on the service, it's possible to access thousands of different databases on virtually every subject: sports, medical information, legal briefs, copper prices, weather, travel, and of course, MIDI and music. Whatever the subject, there's a database. Single? There are even on-line personals.

In fact, there are so many databases (with new ones appearing regularly) that a directory is published quarterly; its 500 pages listing all of the different services available. Although on-line services were used primarily by the scientific and business communities for many years, their general appeal and potential were not realized until 1979, with the birth of the Source and CompuServe, two of the largest general purpose services. Now, hundreds of thousands of home users are taking advantage of what the services have to offer.

ON-LINE REQUIREMENTS

In order to get on line, you of course need a computer. Any computer will work as long as it has a serial port or a port designated as a modem port. You also need a modem. A modem, short for modulator/demodulator, is a device that allows your computer to transmit and receive data over the telephone lines.

Modems, depending on whether you want the Yugo or the Rolls Royce versions, can cost $50 and up. The wide variances in price are due to durability and different options, such as the

baud rate of the modem. The baud rate – the rate at which data is transferred across the phone lines – can vary from 300 to 2400 baud (there are higher rates but you won't be using them for these services). In other words, a 300-baud user requires four times as much time (ie. money) to get information as a 1200 baud user.

Lastly, you need terminal software. Terminal software allows you to configure your modem and computer so that they will transmit and receive data to and from the on-line service. The cost of this software also varies depending on the options, but most terminal programs cost less than one hundred dollars. Some programs are available for free (or for a nominal fee) through user groups (or on line, once you get there!), and there is a good chance that one of these will be adequate for your needs.

Once you have the hardware and the software, you can subscribe to any network(s) you choose. After connecting your modem to your computer and your phone line to your modem, install the terminal software and specify the correct options which your particular network requires. These settings are provided with the documentation which is sent to you from the service to which you subscribe. If you're a PC user subscribing to GEnie, for example, you specify the baud rate, 8-bit words, 1 stop bit, and no parity.

SIGNING ON

To get a feel for getting on line, let's walk through the log on procedure for GEnie, General Electric's on-line service. Once logged on, we can take a look at their MIDI menu. Dial the service number and once you make the connection (remember, to really do this you need the previously mentioned hardware and software, plus you need to subscribe to the service; this ain't free!), enter your identification code and password (given to you when you register) at the U# prompt, as follows: U#"idcode,password." Your password can be up to eight letters in length and it represents your account number, like a credit card number or long distance service number. Don't reveal the password to others as you are liable for charges against your account. If you should forget your own password (it happens), GEnie allows you to call them and, with a simple yet clever procedure, you can verify your identity and retrieve your password. Once you have

entered your password, the following menu screen appears:

GEnie TOP Page 1
GE Information Services

|	
1. About Genie	2. New On GEnie
3. GE Mail	4. LiveWire CB
5. Computing	6. Travel
7. Finance	8. Shopping
9. News	10. Games
11. Professional	12. Leisure
13. Reference	14. Logoff

Enter #, <P>revious, or <H>elp

Like GEnie, on-line services are most often menu driven and offer you a variety of options from which to choose. Menus are multi-tiered so that when an option is selected from the menu you move to another menu of greater detail or complexity. Entering "11," that is the "Professional" option, moves you to the following menu:

GEnie Professional Page 525
Professional Services

1. Public Forum. NonProfit Connection
2. PhotoSource International
3. Photography RT
4. Desktop Publishers (NADTP) RT
5. LEGACY, The Law Roundtable
6. Winchell Typesetting Service Bureau
7. Writer's Roundtable
8. Midi/Worldmusic RT
9. Medical RT

Enter #, <P>revious, or <H>elp

Menus are most helpful when you are first starting out but navigating through them can get tedious and time consuming (ergo costly) once you are familiar with the system. Therefore, shortcuts are available to let you bypass various menus. On GEnie, for example, entering the menu name at the system prompt jumps you directly to that menu. To illustrate, if you enter the word "MIDI" at this stage (or at the Top menu), you jump directly to the following MIDI menu:
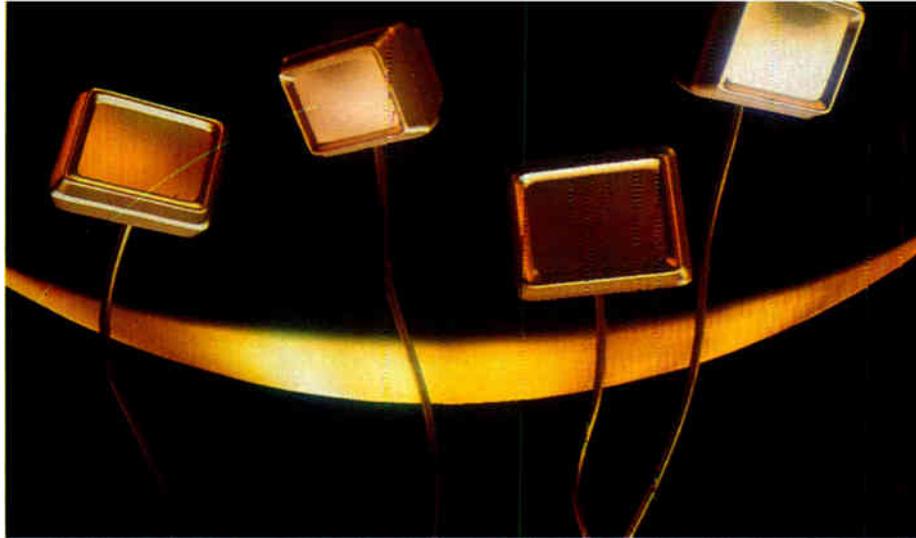
GEnie MIDI Page 430
Midi/WorldMusic Roundtable

1. MIDI Roundtable Bulletin Board
2. MIDI Real Time Conference
3. MIDI Software Libraries
4. About the Roundtables
5. Roundtable News

Enter #, <P>revious, or <H>elp

This menu provides you with a growing list of options. Real-time conferencing, for example, allows you to discuss ideas and concepts with other MIDI freaks on line. In the MIDI software libraries section, you have access to patches, sequences, and various programs. Depending on the service, a bulletin board may have demo versions of commercially available programs which you can download and test drive to see if you really want to purchase them. Also, patches and sequences are divided by instrument and/or manufacturer type, so that you don't have to go digging through mountains of stuff to find what you want. Finally (and most importantly) you can subscribe to MT on PAN, as well as read the editorial and table of contents for the current and upcoming issues.

ADDITIONAL SERVICES

While the music and MIDI options are what you may be most interested in, on-line services offer a lot of options which can really be of added benefit outside of music applications. For example, freeware and shareware are programs that you can download free of charge. Some of the programs request that a voluntary (and nominal) charge be sent to the author if you like the program. There are also a lot of utilities which you may download for your own use. Utility programs are those which help to make you work more efficiently, such as print spoolers, file recovery programs, or DOS-like command programs.

The on-line bulletin board, like a cork bulletin board, lets you electronically "tack" a message to the "board" for others to see and/or respond to. Electronic mail, also called E-mail, is a standard feature of most services. With E-mail, if you need to get information to someone, you can send it electronically, any time of the day or night to their address(es). This represents a considerable saving on long distance bills if you are dealing with musicians across the country. You can even shop by computer. Several services let you browse through on-line catalogs, select the items that you want, type in your credit card number, and you're on your way to the poor farm. If you're the law and order type, Compuserve offers an on-line version of the FBI's ten most wanted criminals. (All of whom are, coincidentally, family members of the editor of this magazine).

A lot of games are also available. Some of the games, like Billiards for the Macintosh, are excellent and free. You just download them to your machine and keep them on diskette. Other games are on line and you sign on and play them. Many of these are rather elaborate – they include a version of Flight Simulator which lets you fly with other subscribers.

You may even be able to do your banking on line (depending on who you bank with and what their subscription procedure is). Being on-line with your bank allows you to transfer funds, pay utility bills, track cashed and uncashed checks, and perform other banking functions twenty-four hours a day.

THE BOTTOM LINE

Granted, getting on-line costs a few bucks. The payback, however, is considerable and once you start taking advantage of the options which a service provides you, you'll find them to be a tremendous help both for your music and non-music computer applications. ∎

You can send E-mail to Steve Lipson on GEnie. His E-mail address is SB. Lipson.

COMPUTER

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Available On-Line Services
ONCE YOU HAVE the hardware and software, all you need to do is select the on-line service that's right for you. You may decide, of course, to subscribe to more than one service. The following list provides a brief summary of a few of the more popular on-line services, their subscription rates, and some of their features. PAN, the Performing Arts Network, is also included because it is geared specifically to the professional musician. Please note that while the rates below are shown hourly, the services charge on a per-minute basis.

General Electric Network for Information Exchange: GEnie
Tel: 1 (800) 638-9636
GEnie, from General Electric, offers a wide range of options including the Midi/WorldMusic Roundtable. GEnie requires a one-time membership fee of $29.95 which includes two free non-prime time hours of use during the first month. On-line rates for non-prime time hours are $5 for 300 or 1200

baud modems. Non-prime time hours are from 6:00pm to 8:00am, Monday through Friday, weekends and holidays. Prime time rates are the remaining weekday hours and are $35 per hour. GEnie has over 90,000 subscribers.

CompuServe
Tel: 1 (800) 848-8199
CompuServe requires a one-time subscription rate of $39.95 which includes a $25 credit towards on-line use. Rates are uniform (no prime time distinction) with 300-baud access at $6 per hour and 1200-baud access costing $12.50 an hour. There is a 25¢ per hour charge on a direct line or a $2 per hour surcharge for a carrier service. Compuserve has over 395,000 subscribers. For musicians, CompuServe offers a MIDI forum and a music forum.

The Source
Tel: 1 (800) 336-3366
The Source requires a one-time subscription fee of $49.95, and there is a $10 monthly minimum fee from which your charges are

deducted. Prime Time rates are $21.60 per hour for 300-baud users and $25.80 per hour for 1200-baud users. Non-prime time rates are $8.40 per hour for 300-baud users and $10.80 per hour for 1200-baud users. The Source does offer a reduced rate of $6 per hour when you log into a SIG (special interest group). The Source has a Music SIG.

PAN
Tel: (215) 489-4640
PAN, The Performing Arts Network, requires a one-time only subscription fee of $150 and a $10/month E-mailbox fee. The network charges $12 per hour non-prime time and $24 prime time, regardless of baud rate. Prime time is any time between 7:00am and 6:00pm, Monday through Friday, EST (take note: EST!)

A large percentage of PAN's subscribers are affiliated in some way with professional acts. PAN also provides a database on bookings for colleges and clubs as well as pertinent data regarding radio stations and record stores. PAN includes real-time conferencing and MIDI data can be sent via E-mail.

</div>
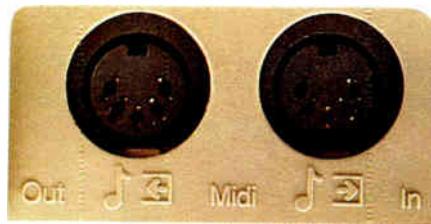
THE DIFFERENCE
BETWEEN A COMPUTER THAT
MAKES MUSIC,
AND ONE THAT MAKES TROUBLE.
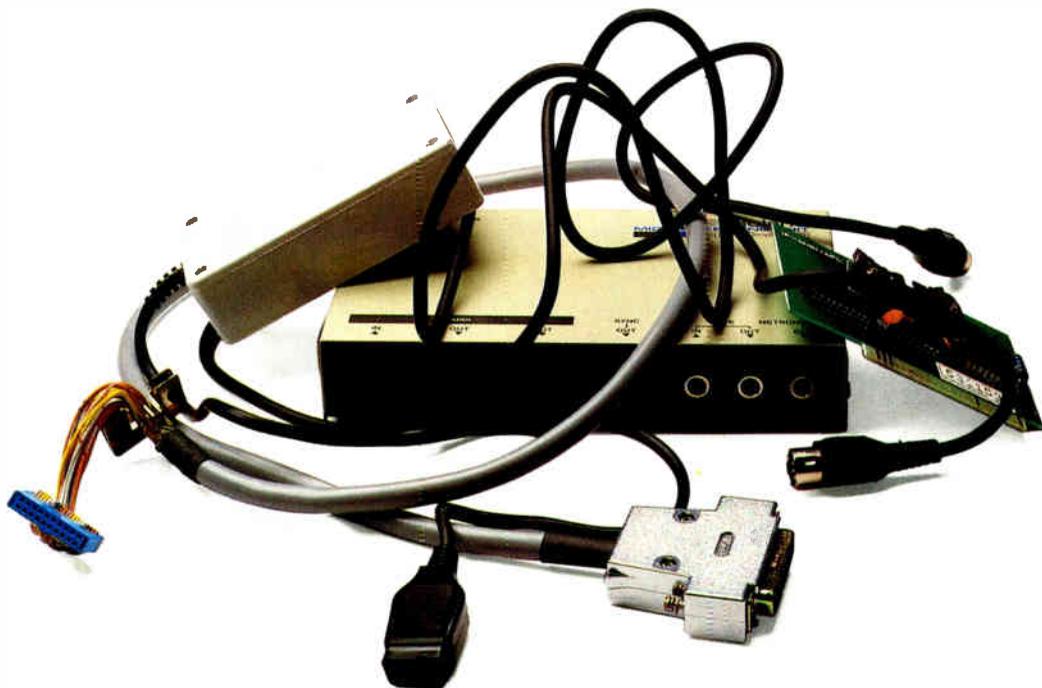
Of all the personal computers you can buy to make music, none makes it easier than Atari computers.

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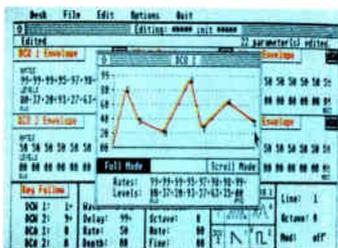
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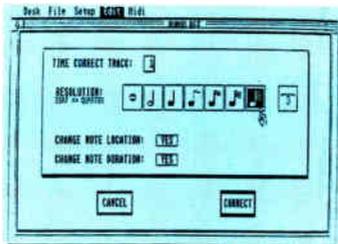
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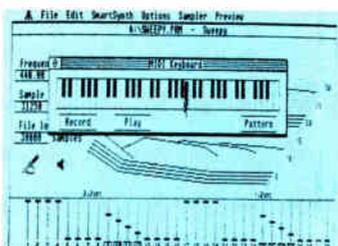
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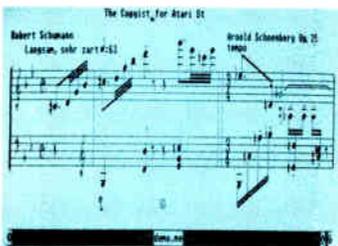
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The idea of connecting together various types of computers and data sources is becoming a topic of great interest to the computer world, and it's begun to make its mark on the world of music and MIDI as well. There may be a LAN in your future. *Text by Harvey P. Newquist III*

IF THE REMOVAL of any single hi-tech appliance could bring the world to its knees, it would have to be the elimination of the telephone. As much as they can be a pain in the backside (they ring at inopportune times, the local Bell companies charge too much, and they don't work well over long distances during hurricanes), telephones are the most important means of communication in our society.

Lest you think this is going to be a commercial for which long-distance company can serve you best, it is actually a look at music and communication, especially communication over networks. Telephones happen to be the oldest and best example of how networks work. One user wants to get or share information with another user, wants it now, and wants it without leaving his or her present location. Telephones fit the bill admirably.

COMPUTER NETWORKS

Let's move onto computers. In any organization that is currently using computer information, or information stored on computers, one of the biggest tasks at hand is making sure that such information is available to every individual who has' need of it. Yet sometimes people don't always use the same brand of computer equipment as the worker in the next office, or at the next desk. The problem here is that computer vendors (and

most manufacturers of hi-tech products) would rather that you use their equipment – and their equipment only. So when designing their computers, they use different operating systems, build their architectures on different microprocessors, and in general, screw up your life if you try to use somebody else's machines. This is known as incompatibility, which is sort of a hi-tech equivalent of Madonna and Sean Penn.

So, now that we know that some machines don't work well with other machines, and that the goal of much of computing is getting information via communications, let's put our scenario into place. You and I work in the same office, recording studio, film editing facility, etc. I've been working on my Macintosh II from Apple Computer over the last six months, and you've been using your IBM PC AT for about the last year. You've compiled this great list of contact names doing research in acoustics in your database; I've been storing up waveform samples of different experiments by those same researchers. This morning, you and I realized we are working on very similar problems, and decide that we should swap our databases, and then merge them to have the best information possible for both of us. We're all smiles until you see my Macintosh and I see your AT. Time stands still as we realize the futility of trying to put our months of research together by simple data transfer. ATs and Macs don't talk to each

other without a certain amount of hair-pulling.

Okay, dilemma defined. But you really don't care about this right now, because you're just using a synthesizer, not a computer, and information interchange and networking don't really matter to you. But do you use MIDI to connect to any other data information source, such as an effects rack or another synth? I thought so. That, in very simple terms, is also networking. You begin to care about networking after all, don't you?

Networking within MIDI is nice and convenient because all of the manufacturers have agreed on a standard that is implemented on each and every instrument (excluding system exclusives, of course). Before this agreement, you were stuck with the problem that exists in personal computing. If you had machines made by the same synth manufacturer before MIDI's popularization, chances are that you could hook them up in some nominal configuration to get them to work together. But if you had a Roland keyboard, say, and an Oberheim drum machine, you could forget about linking them up. As a matter of fact, even hair-pulling wouldn't help. It just wasn't done. It was a case of apples and oranges. Or Apples and IBMs.

Getting back to networks, we've stumbled upon the buzzword of the late 1980s and 1990s. Networking is currently IBM's biggest concern in its machines, and it is the ability of other com-

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puters (such as those from Digital Equipment and Sun Microsystems, for example) to network that have allowed these companies to eat into IBM's stranglehold on the computer biz. What good is your information or someone else's if you can't get to it from wherever you want to? Putting it in a more specifically musical realm, what if you and I want to work on different pieces of the same problem, such as scoring film sequences to different scenes in the same movie? Here's where we get into networking, or more precisely, local area networks, or LANs as they are called.

LANS

LANs are exactly what they sound like, networks for closely located machines that don't really have a great need for accessing information from the outside world. Office intercoms are a rudimentary example of LANs, but since they are part of the phone world, they have an entirely different set of weird acronyms, usually having to do with PBXs. But you get the idea. A LAN connects your computer and mine with the person down the hall, and the boss upstairs. All of us can get to the same info without leaving our desks, even if we have different computers, because the network handles the exchange of information. So even if I can't plug my PC directly into yours, both our machines may be capable of accessing the same network, and then exchanging info over it. Think of it as being a little like watching videotapes in either VHS or BETA format. While we can't swap tapes between my BETA and your VHS, we can plug them into the same TV set and get copies of each other's videos. This however, is a passive form of data exchange, because the original material remains untouched.

A LAN allows for active interaction, so that I can correct or update information contained in the master system, as can any other user in the system. I'm leaving out any discussion of data security and who should really have how much access to which sets of information. Although a related topic, it's not really important here. Anyway, you begin to get the general idea of what a LAN can do.

ADVENTURES IN MIDILAN

Taking this into the realm of music again, my IBM PC XT clone with an MPU40I MIDI interface, and my Alesis Midiverb, DX7II, and Roland 707 drum machine form a small LAN. By adding a friend's ESQI and Korg DRMI, we now have a multi-user network where more than one individual has access to the data (samples, drum sounds, patches, controllers, etc). The problem is that in this environment, limitations such as number of voices, the linking of MIDI In/Out/Thru, and the general direction of the information flow determine who has access to what. If hooked up correctly, my friend becomes nothing more than a shill in this network as I exercise complete artistic and technical control over his instruments and mine. So much for data exchange.

Unfortunately, this does defeat the purpose of a network, in much the same way a phone line running only from your bedroom to your kitchen would defeat the purpose of a full-fledged phone system. In order for all users to take advantage of all instruments and their assorted facilities, it becomes necessary to think about networking them.

Let's look at the obvious benefits of putting our existing MIDI-based machines onto a LAN. First of all, we could do away with the concept of "master-slave." Just as in the networking of computers, everyone has access to everything, and no particular station (unit, player, performer, composer, user, etc) has control over any other. A system of this sort would allow for multi-directional passing of MIDI information, which means that my friend in the previous example would be able to access the data in my instruments. Without a MIDI merger and/or switching system, this is not currently feasible because he is "down-line" from my master keyboard, and as such could only access other MIDI'd instruments that might be hooked up down-line from him.

Another benefit of networking MIDI instruments would be the ability of all the machines to continually send out MIDI info to specific addresses, or stations, without worrying about where that address was physically located in relation to the sender. If I'm Instrument #1 on the network, I might be sending out patch changes to Instrument #6, which in turn might be instructing Instruments #3 and #7 on controller settings at the same time. The limitations now become how many voices each machine has, and whether it can accept certain kinds of change and edit information, but it has escaped the tyranny of being bound by the cabling setup as dictated by MIDI In/Out/Thru ports.

You're probably beginning to wonder where the applications are for such an idea. Take performance for example. If multiple stage players are using MIDI instruments, it is usually in their best interest for each to have his or her own setup, simply because each performer needs complete control over their individual parts. The current MIDI standard specs don't allow for efficient multiple user stage systems, simply because of the master-slave relationship described above. But what if you could take all those wonderful instruments or racks and put them on a local area network, so that each performer had access to all the data on stage? Interesting possibilities, no doubt.

A very real and very efficient use of a MIDI-based LAN would be in film scoring. Say you have a database of sampled sound effects in a number of modules, and you have a couple of technicians working to apply sound effects to an unscored movie. Instead of having only a single user that can reach into the database, with networking you have the capability of multiple access, so that work can be done simultaneously if necessary. This would certainly speed up the process considerably if a group of individuals could take separate parts of the same movie yet work on scoring those parts at the same time.

We do run into a problem here. With all of ▶

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► this wonderful multi-directional interconnectivity going on, you start to slow down the network with all of the information being passed over the lines. An alternate method of creating an efficient network has been espoused by Professor William Buxton of the University of Toronto. His idea is for an actual MIDILAN, which would contain a number of nodes of MIDI machines. Each node would be controlled by a "server," a computerized device acting as a complete MIDI merge and MIDI filter system. This server would then be linked to other servers that control other MIDI devices. The servers would be linked via LAN, and would be the "postmen" of the entire system. They would pick up and deliver any messages for and from the individual devices within their nodes and send them to the appropriate "address." The beauty here is that the LAN where the servers reside could send information faster than the baud rate (a communications speed of 31,250 bits per second) currently defined by the MIDI 1.0 spec. So there could be an increase in transmission speed between servers, before the information was reduced back to MIDI spec speed.

This latter aspect, as outlined in a paper by Chris Meyer, could be used to overcome some of the problems of transmission speed that are obstacles in MIDI 1.0. As we try and shove more information down the throat of each MIDI cable, we increase the burden that the line must bear. Consequently, much of the screaming

going on for a MIDI 2.0 spec deals specifically with increasing transmission rates. However, this could potentially obsolete the world's installed base of MIDI machines. Such an occurrence could cause an uprising from those of us who already have many dollars invested in existing equipment, and perhaps bring an end to life as we know it.

The MIDILAN does allow for an increase in speed, and thus overcomes some of the objections having to do with transmission slow-downs. A number of manufacturers are interested in the concept, and it is expected that by the end of this year the idea of MIDILANs will be a very hot topic indeed.

AUDIOFRAME

For those of you not willing to wait and see how the concept of a local area networking of MIDI devices turns out, there is a glamorous, and somewhat expensive, alternative available today. An audio workstation developed by WaveFrame Corporation allows for all of the things that I've been discussing here, but builds its network specifically on IBM's proprietary Token Ring network using PCs. The workstation is called the AudioFrame, which is composed of modules incorporating such things as analog-to-digital/digital-to-analog converters, sampling synthesis, 14 Megabytes of memory, a variety of MIDI and SMPTE options, and a link into the Token Ring network. The user interface is an IBM PC, either of the AT class or the new

PS/2 systems. The software for AudioFrame is your basic MS-DOS running Microsoft's Windows, so there aren't any surprises in having to learn all kinds of new operating systems. Oh yes, and the system has the potential to interface with about 250 devices at one time.

Not only can you have multiple users on the AudioFrame simultaneously, but you can also achieve multitasking, which is having those users work on separate and independent applications at the same time. There are a lot of features and benefits to the AudioFrame, too many to go into here. Suffice it to say that this machine starts at $45,590 for a 16-voice system, and up to around $91,000 for 48-voice capabilities. Think of it as sort of a Synclavier with a built-in LAN.

As the importance of networks makes more headway into traditional computing, it will also become vastly more important to the ways that we transfer musical data. The potential for use in recording and film studios, within bands, in sequencing and performing, and in allowing more personal freedom within an electronic music environment is enormous. Just think of how fast things change in this industry, and you can tell that the commercial implementation of networks in music is not too far off.

It may not be as earth-shaking as the installation of the first telephone network, but then again, you can't perform your latest musical masterpiece on your telephone, either. At least, not yet. ■

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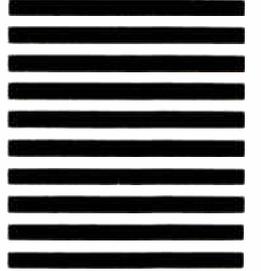
Software Roundup:

Low-Cost IBM PC

Sequencers

As IBM music software becomes more flexible and less expensive, more folks are turning their sights towards Big Blue. In focus here are two new sequencing packages, Forte I and Sequencer Plus Mk I, coming from the $150-and-under category. *Review by Michael Stone.*

LET'S FACE IT. Some IBM software packages are easier for certain people to make music with than others. Your taste in sequencers, for example, may well depend on how the screen looks or which keys are used for record and playback. Other factors are more easily measured, so programs are generally rated in the areas of user-friendliness, error handling, documentation, and availability of telephone support.

One other thing that remains consistently important, of course, is value. As might be expected, there seems to be a big increase recently in the bang that you get for your PC software buck. The two sequencer programs being looked at here, are thus of particular interest because both are full-featured and sell for a relatively low price ($150 or less). The two in question are Forte I, from LTA Productions and Sequencer Plus Mk I, from Voyetra.

Magazine lead times being what they are, the makers of Forte want you to know that they have a completely revamped version of their product coming out within the next few months. Forte II may well be available by the time this reaches you, but it will carry a higher price tag.

The system requirements for both programs tested were practically identical: an IBM PC or compatible, 256K, DOS 2.1 or greater, two floppy drives or a hard disk; and the Roland or Octave Plateau MIDI interface units. Voyetra will sell you an OP400I interface box, while LTA's future marketing plans include the possibility that the product will be included (bundled) with another vendor's MIDI option card.

Neither of the developers contacted for this article said they had current plans to adapt their programs to support IBM's new Personal Computer Music Feature card. But compatibility with standardized file formats is gaining popularity among the software makers I queried. The Voyetra program has a special "ZSAVE" command to save song files in the Dr. T's Copyist format. Also from Voyetra is a separately-sold Conversion Master to go back and forth between Jim Miller's Personal Composer format and that of the Sequencer

Plus series. LTA expressed support for the newer MIDI Standard file format and promised conversion utilities.

Both Forte and Sequencer Plus Mk I (SPI)

are copy protected. Each uses both a key disk scheme and an installable hard-disk copy protection scheme. (Forte includes the hard-disk version – Voyetra will mail it to you upon

The Note Edit menu from Voyetra's Sequencer Plus MkI.

Forte's Step-Sequencer menu.

receiving your registration card.)

Voyetra, more so than Forte, are very sensitive to piracy issues. A windy licensing agreement is printed on the outside of the box, and inside the manual you have to wade through II more pages of shrinkwrap legalese prior to any discussion of the program itself. Though it is fashionable for reviewers to go after vendors who still use copy protection, there is something to be said for it from the standpoint of the designers who want to get paid. Of course, piracy comes right back to musicians in the form of home taping.

You should be very aware that some of the copy-protection schemes can fail, resulting in the possible loss of your investment. For example, some popular schemes for hard-disk installation (used by Forte I and Sequencer Plus Mk I) create a number of hidden files on your hard disk which are impossible to ever completely remove. Should a disk failure make it necessary for you to reformat or disk-organize your hard disk, and if you aren't able to de-install the software in time, you could be out of luck.

FORTE I

The key feature of Forte, according to its developers, is the step sequencer that permits you to play individual notes from the synthesizer keyboard. You play the note, press the space bar, and play the next.

While Forte is an impressive and full-featured sequencer program, with a 125-page indexed

manual, it didn't do as well as the Voyetra in the subjective area of "look and feel." For example, the use of the space bar to initiate playback is a more natural action than the smaller function key F2. This could very well be remedied by giving out color-coded function key stickers or keytops. People who use Forte often will need to remember a lot of different single-letter commands and Ctrl keys. (Many excellent programs like WordStar have survived this sort of criticism.) An on-line help screen is available at any time by pressing H.

Forte's note editor gives you a great deal more positive control than that of the Sequencer Plus Mk I; you can play back the track in "follow the bouncing ball" mode, a feature not found on the other programs tested. You can edit program changes, controllers and

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Feel *"While Forte is an impressive and full-featured sequencer program, with a 125-page indexed manual, it didn't do as well as the Voyetra in the subjective area of 'look and feel.'"*

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assorted other MIDI info, as well as actual notes. Like the SPI, the Forte track displays the notes as would a player-piano roll stretched out horizontally. Unlike the SPI, you are not limited to editing actual notes, and you can play notes into the buffer directly from your synth in step edit mode.

Forte's step editor is actually a separate screen from the regular note editor, and contains a number of features that the

developer claims is unique to MIDI products for any personal computer. You play a note or chord on the synth, hit the space bar to enter the note or chord, and perform an array of editing functions. When changing a note, for example, you are prompted for whether you wish to preserve the Start, End or Length of the note. The detail and features of the note and step editors are truly impressive.

Eight buffers are available for temporary storage, as opposed to three on the SPI. On the other hand, the SPI saves your buffers to disk along with your tracks. This is an advantage if you like to keep your buffers, but it can eat up disk space. Forte includes many of the editing features that were omitted from the SPI, such as editing of controller and program change data.

A separate conductor menu enables you to change tempo or meter on the fly. The program's makers say its auto-calculate feature is useful for playing in very weird time signatures, such as those used by, say, Stravinsky or Zappa, without having to use a calculator to compute note lengths. Other nice features of Forte include input channel conversion (as you record, the track goes into memory with a different channel number) and an options screen that includes a DOS shell and support for

Song Position Pointers.

At press time, a new version of Forte appeared, Forte II, which sells for $250. It offers 32 tracks, a pattern editor, a storage facility for MIDI SysEx messages, macros, MIDI files, SMPTE autolocation, and many other new features. Updates from Forte I are $100.

VOYETRA SEQUENCER PLUS MKI

SPI was clearly the fastest and easiest to use of the two sequencers I tested. While both appear to be written in assembly language, SPI's speed is blinding. Two lines on the screen are devoted to on-line help and the program offers a clear and consistent menu structure.

Spokesmen for some of Voyetra's competitors were scornful of the way this program was made, that is, by producing a limited-function, de-featured, stripped-down version of their $495 SP3 package. On first glance, it appeared that this criticism was unjustified. The low-end user doesn't need 64 tracks, nor does he/she really have to have links, say, to voicing editors. I found, however, some areas where Voyetra has consigned a few too many features to the bit bucket, producing the software equivalent of the Earl Scheib $99 auto paint job.

Gripes aside, SPI is a very easy-to-use and enjoyable program which has a great note editor and other features. Five main command screens are available – Main, Edit, Note Edit, View and

Files, as well as pop-up windows for Punch-In, Options and Configuration.

The main menu screen shows all 16 tracks and their status: loop, mute, program, quantize, length, etc. The View feature shows the longer-range view of all tracks, and the Edit screen shows each note on a horizontal bar display, as in Forte. A Note Edit screen is used for more

Editing "*Forte includes many of the editing features that were omitted from the SPI, such as editing of controller and program change data.*"

detailed editing of a note's pitch, length or velocity.

The note editor, while you can't play notes into it from a synth, is well laid out – you use INS to insert a note and DEL to delete. It's very easy to use the cursor keys and INS to lay down a few notes and then use the space bar to play back the measure. Only one measure at a time is displayed, and if you move the cursor past the end of the measure you will see only the contents of the next measure – which can complicate things when you're working near a measure boundary. Unfortunately, no provision for switching among the MPU401's sync modes (internal/external/FSK) is available.

Voyetra markets two more substantial versions of Sequencer Plus, the $295 Mk II and the $495 Mk III. These two offer trial subscriptions to PAN, the on-line bulletin board service for performing artists. SP2 can be upgraded to SP3 by paying the difference in cost.

A key disk that goes south will be replaced once for $25. The $99 SPI program described here does not include the PAN information and cannot be upgraded or traded in.

While it would have been nice to see more beef here, I really liked the program. If I were you, however, I'd hold out for at least the SP2 so you can upgrade. Even so, the SPI's overall quality reminded me of the best of the Lotus or Microsoft releases.

CONCLUSIONS

Given the trend toward acceptance of the MIDI file format, it's likely that many people will use more than one sequencer program, taking advantage of the unique strengths of each. My overall impression was that the SPI was the easiest to use and the overall best value; the Forte I is recommended for those who need a full-featured program and like to use funny time signatures and other less-standard musical constructions. ▪

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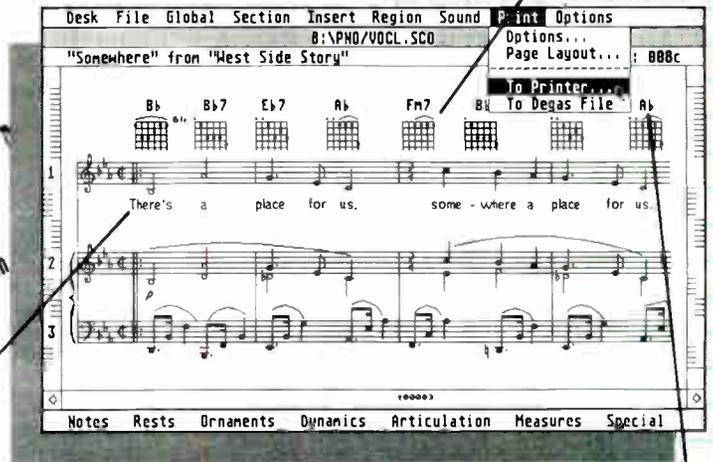
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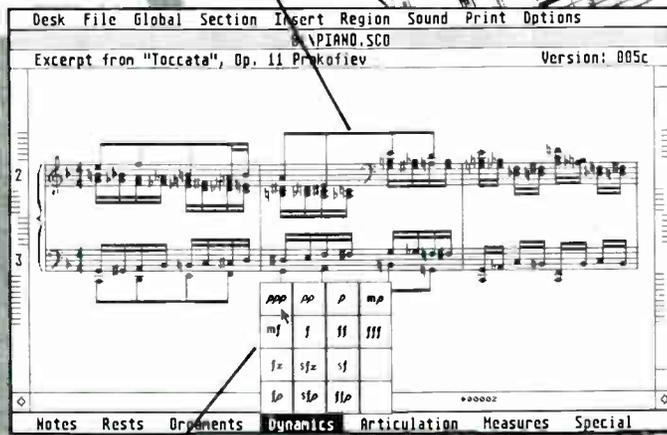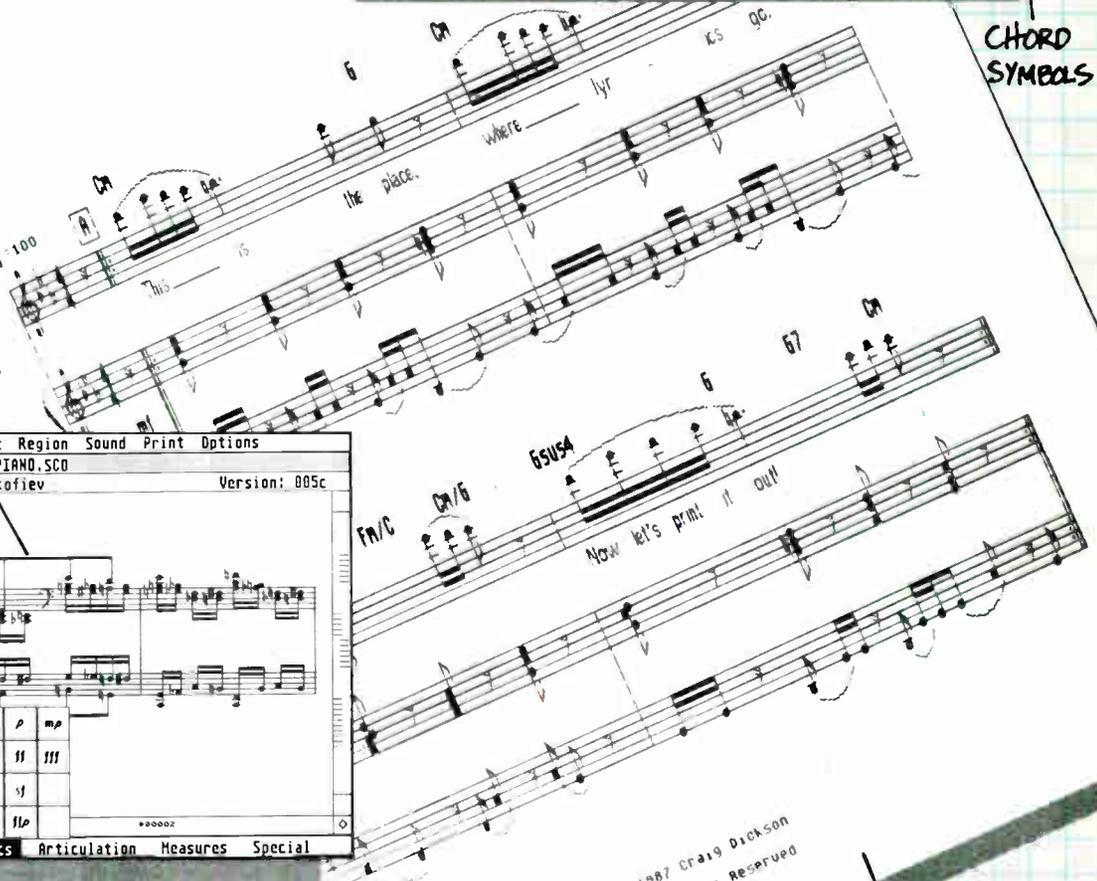
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Alesis
MMT8 Sequencer

The first of the boy wonders from Alesis to arrive on the scene makes us ponder, is it really as good as they say it is? *Review by Simon Trask.*

DRUM ROLL, PLEASE. Six months after it was first introduced at the Chicago NAMM show, the Alesis sequencer has finally come into formal existence. (Cue the sampled crowds and marching band . . .) The wait has been a frustrating one for many and, as a result of it, a certain mystique has built up around the MMT8 and its companion, the HR16 drum machine. Talk of the ultimate and end-all products has arisen in some quarters and the MMT8 has certainly created a large pair of shoes for itself to fill. All that power for *how much* money? Well, the MMT8 can't completely live up to its overinflated reputation, but it comes pretty damn close.

The Box . . .

THE ALESIS MMT8 (MIDI Multi-Track Eight) is a compact, lightweight unit with a sloping front panel which has a very sensible layout. Alesis has provided plenty of dedicated function buttons, many of which have to be held down while you use the function they reveal. It's somewhat strange at first, but it makes for quick and efficient operation and it gives you greater confidence in what you're doing (you can release a button at any time and find yourself back at the Play/Record level). A few buttons (those for Part, Edit and Song

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modes, Loop and MIDI echo) can be switched on/off, and have red LEDs to display their status.

For buttons themselves, Alesis has used a rubber material that I don't particularly care for, but which probably helps keep the manufacturing costs down. On top of the front panel there's a lid which opens to reveal a ready reference guide – nice, though the type is a bit small.

Beneath the centrally-situated 2×16-character backlit LCD is a numeric keypad and the usual +/– buttons, and to the left of these are Page up/down buttons which take you to further displays for certain functions.

In the lower half of the front panel are eight dedicated track buttons, each one sporting its own red LED to indicate on/off status. Below these buttons are the "transport" controls: Play, Stop/Continue, Record, Fast Forward and Rewind.

The dedicated track buttons allow you to mute/demute tracks in real time with the sort of spontaneity that's hard to achieve using a mouse-based sequencing setup. Apart from its more immediate creative applications, this can be a great bonus if you're using multitimbral instruments with stereo outputs, or if your mixing desk simply doesn't have enough channels to handle individual outputs. In

practice you can manually switch in/out a maximum of three tracks at a time with consistency.

Unusually, the MMT8 "replays" any notes that should be sounding when you de-mute a track. Because MIDI can't start a note partway through its envelope, you get the attack of a note even if it should really be at the release stage. Still, it's a feature which can be put to good creative use.

The rear panel provides 9V DC power input, MIDI In, Out and Thru, tape in and out (for memory storage and tape sync), footswitch input (for sequence start/stop), and click out (for the metronome).

The MMT8 has a familiar memory organization: 100 parts (patterns) each of which consists of eight tracks. A part can be from 1-682 beats long (that's a maximum uninterrupted recording time of five minutes 41 seconds at 120bpm). Parts can be chained together in up to 255 steps to form songs, of which there are 100.

The Parts . . .

PART LENGTH IS measured in beats, as the MMT8 doesn't deal in bars or time signatures. Some careful planning of beat and click values is needed if you want to incorporate time signature changes in a part (the MMT8 provides a choice of 10 metronome click values from 1/2 to 1/64

notes including triplets).

The length of a part can be predefined, or else determined by the length of the first track you record (up to 682 beats). However, you can alter the length of a part at any time. Reducing the length will wipe whatever data was in the "chopped off" section, while extending the length inserts blank beats up to the new end point. You can remove from or add to the beginning of a part as well as the end, an invaluable feature when it comes to extracting those few magical beats from an otherwise uninspired session.

Recording can be either from the beginning of a part (in which case you get a count-in of from 0-99 metronome clicks – the default is a sensible four) or else play through the part and hit Record (drop in) at the appropriate moment.

In both cases you can drop out of Record at any time. However, for some reason you can't drop in and out of Record more than once during a single playthrough, unless you Stop/Continue the part before attempting to drop in again. Unfortunately, the footswitch can't be used to drop in and out of Record mode, so you've got problems if playing two-handed.

Selecting MIDI Echo allows incoming MIDI data to be echoed to MIDI Out. With the current record track set to "All," data is echoed on the same channel(s) it's received on; if set to a specific channel, data is echoed on that channel. However, if the MMT8 isn't set to Record Ready or isn't recording, the incoming channel remains unchanged.

The Loop function causes the current Part or Song to loop indefinitely. Alesis has missed out by not providing a loop-in-record mode for recording rhythm parts, however.

You can either select a specific MIDI channel or "Unchanged" for each track. If the former, then data on any incoming channels will be recorded on the assigned channel, while Unchanged means that incoming MIDI channels will be recorded unchanged (logical, really).

Holding down the MIDI Filter button and using the page up and down buttons allows you to choose notes, pitch-bend, aftertouch, controllers (globally), patch changes, SysEx, and MIDI channels (all or individual) for selective filtering at the input stage. You needn't bother filtering polyphonic aftertouch or release velocity, however – these are automatically filtered by the MMT8, presumably because Alesis felt they were too memory-intensive.

If you select "all MIDI channels" then the MMT8 will record all MIDI data that it receives (subject to the other filter options). However, if you select a single MIDI channel then the MMT8 ignores all channels except that one (unfortunately it doesn't echo the other channels to MIDI

Out either, which isn't very helpful if you're using a master keyboard).

Recording and storing data on multiple MIDI channels per track is one of the MMT8's great strengths. MIDI guitarists can record in mono mode, keyboard players can record using a multisplit master keyboard, and anyone can play sequences across from another sequencer into the MMT8 (and in some cases vice versa – I was able to transfer sequences in both directions between the MMT8 and C-Lab's Creator sequencer for the ST, which also features multi-channel record). With the addition of a MIDI merge box on the front, it should also be possible to indulge in duet recording, though this wasn't something I was able to try out solo.

For many musicians, multi-channel tracks mean that in effect you've got many more than eight tracks at your disposal. If you really want to be extreme about this, 8 tracks × 16 channels = 128 tracks. Just remember you've only got one set of 16 MIDI channels to send them out on.

The MMT8 records to a resolution of 96ppqn. Once you've recorded a track you can quantize it to any value from 1/2 notes to 1/64 notes including triplets. You can also quantize any combination of the eight tracks (press the relevant track buttons and their LEDs will light). As there's no recovery option in case the results aren't quite what you'd hoped for, it's safest to copy the relevant track(s) first.

You get a choice of four quantize types: note start, note start and end, note end, and keep duration. The latter type moves note offs in step with their note ons, so that note durations are preserved.

Copying on the MMT8 turns out to be an extensive feature. Whole parts and individual tracks can be copied. You can copy a part to an empty part or to an existing part, even to itself. In the latter two instances, Copy becomes append as the source part is appended to the destination part. It's a quick way of

and get rid of pitch-bend and aftertouch data, or copy MIDI channel one only and get rid of channels two and three. Copying a particular channel to another track (in the same or another part) allows you to isolate a specific musical part from a multi-channel track so that you can quantize it, shift it to a different MIDI channel, transpose it, or simply use it as the starting point for another magnum opus.

Merge allows you to combine two tracks within the same part, with either of the pair being chosen as the destination track. In this way you free a track for further recording. Merged tracks of course keep their own MIDI channel assignments, so you can mix down any number of tracks onto a single track without finding that, for instance, your percussion parts and double-bass line are suddenly being played on a bass trombone.

However, if you merge a couple of tracks that are assigned to the same MIDI channel, there is no way that you can subsequently change the channel assignment of one because you now want it played on a different instrument. This unfortunate state of affairs could have been avoided by providing a function to define note range when you copy a particular channel to another track.

Erase offers the same range of options as Copy: you can erase any combination of tracks, and select what data you want to erase – particularly useful for erasing a specific channel from a multi-channel track.

The MMT8 allows you to transpose any combination of tracks up or down in semitone steps (0-99). Notes that would be transposed out of the MIDI range are automatically readjusted in octave steps. It's a pity that you can't define a note range for transposition, as this can come in useful where you have several rhythm parts playing on a drum machine within one track and you decide that the conga part should be played on the bongos after all.

If by some misfortune you should fill up

"Track shifting has nothing to do with Amtrak, though it does have a lot to do with delays – individual tracks can be shifted by 48 384th notes."

lengthening a single part, or of drawing together several short parts. Alesis' approach to copying also has the virtue of making it impossible to accidentally overwrite a part.

Individual tracks can be copied to the same or another part, and to the same or another track. Copying a track to itself might seem like a rather pointless exercise, except that the MMT8 allows you to copy selected data. Using the Page up and down buttons in Copy mode you can select one of 22 options: notes, pitch-bend, after-touch, controllers, patch changes, SysEx data or individual MIDI channels 1-16. So now you can copy notes to the same track

the memory (not something you're likely to do in a hurry, I should add), the unlikely message "Bummer, dude! Memory is Full" appears in the display for a few seconds. Awful Californian slang, but you do get the feeling that someone somewhere is sympathizing with you (I think).

The Bits . . .

STEP EDITING ON the MMT8 is where you *really* have to get to grips with numbers. To be fair, there's not much else you can do with a limited display, and Alesis' approach is much the same as that used in dedicated sequencers.

Essentially you get one MIDI event per ▶

► screen display, with the information displayed depending on the type of event. In the case of a note on you get the start position expressed as beat and sub-beat, the note name, velocity value, duration (as beat and sub-beat) and MIDI channel assignment. These can all be edited using the numeric keypad and Page up/down buttons, while the Fast Forward and Rewind buttons step through the individual MIDI events. Fortunately, you don't have to know your MIDI commands numerically: the MMT8 will tell you in plain English whether you're looking at a note on or a patch change.

The Event mode can also be used for entering music from scratch in step time. The MIDI event type at each step is selected using the Page up/down buttons. Events can be positioned anywhere within a track to 1/384th-note resolution. It's not the most straightforward of processes, and quite why you have to start by entering an event on the last click of the last beat of a track I don't know.

Unfortunately you can't input MIDI data such as notes and patch-changes from a MIDI instrument, nor is data sent back out over MIDI as you step through it. Both are features which would have lessened the reliance on numbers in favor of the actual sounds.

But it's a definite advantage being able to get to grips with your music at such a detailed and precise level. If nothing else, it can be educational to analyze your timing at "click" level.

The Songs . . .

THE MMT8 PROVIDES 100 Songs, though you're more likely to run out of memory (or inspiration) before you use them all. Each Song can have up to 255 steps (a step contains a single part), and the MMT8 includes the usual step insert and delete editing features.

The good news is that each Song can be given its own tempo, and that track mute settings can be memorized for each step in a Song. The latter feature isn't as flexible as being able to record mute/demute settings at any point in a Song (as C-Lab's Creator,

"Clearly, accessibility was a prime objective of the company's design team. If ever there was a sequencer which didn't get in the way of making music, this is it."

for instance, allows you to do), but you can mute or demute tracks at any time manually while a song is running.

The bad news is that you can't have tempo changes within a Song, nor can you tranpose parts. The latter omission is more of an inconvenience (you'll have to copy and then transpose parts in Part mode, thus using up more memory), but there's no way around the former – unless the slight but noticeable pause caused by

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manually switching from one Song to another isn't a problem for you. Also absent is the ability to program *gradual* tempo changes, though at least you can alter the tempo of recorded tracks manually in real time.

In Song mode the quantization button takes on a new function: track shifting. This has nothing whatsoever to do with
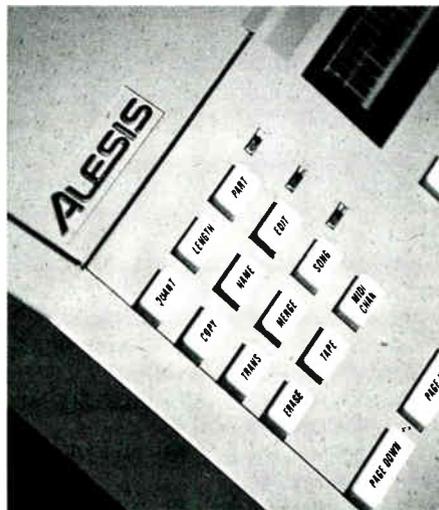
Amtrak, though it does have a lot to do with delays. Individual tracks can be shifted by a maximum of 48 384th notes (that's an eighth note to you) in either direction. What this represents in actual time depends on the tempo of the music. For instance, at a tempo of 125bpm one 384th note (a 96th of a beat) has a duration of five milliseconds. Values set for each track apply to all 100 Songs.

The MMT8 can sync up to the outside world, with MIDI & Internal, Internal Only, and Tape Sync options. With "MIDI & Internal" selected the MMT8 responds to whichever "trigger" it receives first (MIDI start code or MMT8 Play button). You can also decide whether or not to send out MIDI sync.

The Store . . .

THE MMT8 PROVIDES two means of storing your music: tape and MIDI. Tape storage allows you to save and load all Parts and Songs or individual parts, and to verify a tape for any save errors. Dumping the MMT8's entire memory to tape takes six minutes, after which time it's advisable to verify the tape. All in all, not my idea of fun.

The sane alternative is to transmit the MMT8's contents over MIDI to an external storage device such as Yamaha's MDFI MIDI Data Filer. Full memory transfer takes a modest 30 seconds, the data being sent as a single SysEx block whose length is

determined by the amount of data in memory.

Alesis points out that the MDFI (the most obvious choice for MMT8 companionship) can only save 85% of the MMT8's memory. Unless you need to use the whole memory for one piece of music, it's probably worth sacrificing that extra 15% of memory for the benefits of disk storage.

DX7IIFD owners are worse off: no more than 25% of the MMT8's memory can be saved to the synth's disk drive. If you're fortunate enough to own Oberheim's DPXI sample replay unit you'll be glad to know that it will soon be usable as a SysEx storage device too, courtesy of new software from Oberheim. There should be no memory shortage problems there.

With its ability to accept sequences played over MIDI in real time from another sequencer the MMT8 would seem to be a good candidate for live sequencing, allowing your computer-based sequencer to stay safely at home. Alesis' sequencer is certainly portable, if not exactly what you'd call rugged. I'd say a flightcase and a disk-based storage device will be essential if you're planning on doing some serious gigging with the MMT8.

Conclusions

I MUST CONFESS to being more impressed with the MMT8 than I anticipated. I was ready to give the little guy a tough time because the advantages offered by a setup based around a computer system are so overwhelming. Yet the MMT8 has reminded me that dedicated sequencers can have a charm all their own. There's no denying that the immediacy of the MMT8 is a big point in its favor. Physically punching buttons can be much more satisfying than dragging a mouse around.

Alesis' sequencer certainly scores in operational accessibility, despite one or two annoying quirks; clearly, accessibility was a prime objective of the company's design team. If ever there was a sequencer which *didn't* get in the way of making music, this is it. And the fact that it does what it does for the price they charge is nothing short of remarkable. Just as the Microverb gave everyone who wanted to the chance to own a digital reverb, so will the MMT8 give anyone a chance to get into MIDI sequencing.

The MMT8 is being touted as an entry-level sequencer but it has enough power and flexibility to grow with you as your confidence and aspirations grow.

If you'll forgive a journalistic cliché, Alesis is on to another winner here. ∎

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Said Roland's Mr. Kakehashi at the NAMM show, "You got it out *already!"* Covers set up, rechannelizing MIDI data, sounds and sound banks, partials defined, overflow assign, reset switch, selecting patches from a keyboard, patch numbers and synthesizers, controlling the reverb, MIDI implementation, special multitimbral tutorials, advanced sequencing, recording with the MT32. *Now just $10.95.*

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PATCH WORK

This is the page where MT's editorial team invite you, the readers, to demonstrate your own synthesizer programs. Send us your favorite sounds on a photocopy of an owner's manual chart (coupled with a blank one for artwork purposes), accompanied by a short demotape. Please include a description of each sound and write your full name and address on each chart. If we publish your patch, you'll be rewarded with a complimentary one year's subscription to MUSIC TECHNOLOGY. Interested? Then get twiddling and get scribbling!

The address to send sounds to: Patchwork, MUSIC TECHNOLOGY, 7361 Topanga Canyon Blvd, Canoga Park, CA 91303. ■

KAWAI K3
Heavy Organ
Steve Porter, Pleasant Grove, AL

Our first ever offering for the K3 is a nice, round-sounding organ patch with a bit of a bell tone on top. It's programmed to respond to aftertouch by opening the filter, so you can use this to further brighten the sound. (As the K3 doesn't seem to have a standardized patch chart, Steve has simply listed the parameters in numerical order.) ■

Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
1	7	14	19				
2	16	15	6				
3	0	16	-				
4	0.3	17	31				
5	1	18	14	27	17		
6	1	19	31	28	1		
7	12	20	1	29	0		
8	0	21	5	30	8		
9	0.4	22	-	31	1		
10	77	23	31	32	1	36	0
11	9	24	16	33	5	37	6
12	0	25	5	34	5	38	0
13	6	26	72	35	8	39	1

OBERHEIM MATRIX 6
Orkestra
Michael Smith, Mena, AR

Matrix Modulation

	Source	Amount	Destination
0	ENV1	+63	VCA Vol 1
1	KYBD	+33	LF01Spd
2	KYBD	+32	LF02Spd
3	VELO	-58	ENV2Atk
4	OFF	-0	OFF
5	OFF	-0	"
6	"	+0	"
7	"	"	"
8	"	"	"
9	"	"	"

	0	1	2	3	4	5	6	7	8	9
00 DCO1	Freq 12	Fr/Lf1 +18	Sync 1	Pw 32	PW/Lf2 +55	Wave 31	Wsel PULS	Levers OFF	Keybd KYBD	Click OFF
10 DCO2	Freq 0	Fr/Lf1 +0	Detune +9	Pw 33	PW/Lf2 -63	Wave 31	Wsel PULS	Levers OFF	Keybd KYBD	Click OFF
20 VCF/VCA	Mix 31	Freq 13	Fr/E1 +52	Fr/Prs +0	Res 0	Levers OFF	Keybd KYBD	VA1 17	VA/VI +23	VA/E2 +63
30 FM/TRCK	FM 0	FM/E3 -0	FM/Prs -0	TrckIn KYBD	Track1 0	Track2 15	Track3 31	Track4 47	Track5 63	
40 RMP/PRT	R1Spd 0	Trig SNGL	R2 Spd 0	Trig SNGL	Port 0	Spd/VI -0	Mode LINEAR	Legato OFF	Keymd REASSIGN	
50 ENV1	Delay 0	Attack 8	Decay 25	Sustn 30	Rel 63	Amp 37	Amp/VI +63	Trig SNGL	Mode NORM	Lf1Trig OFF
60 ENV2	Delay 0	Attack 26	Decay 49	Sustn 63	Rel 16	Amp 22	Amp/VI +63	Trig SNGL	Mode NORM	Lf1Trig OFF
70 ENV3	Delay 0	Attack 0	Decay 20	Sustn 0	Rel 20	Amp 40	Amp/VI +63	Trig SNGL	Mode NORM	Lf1Trig OFF
80 LFO1	Speed 48	Sp/Prs +0	Wave TRI	Retrig 0	Amp 63	Ap/R1 -0	Trig OFF	Lag OFF	Smpl KYBD	
90 LFO2	Speed 29	Sp/Kbd +0	Wave TRI	Retrig 0	Amp 63	Ap/R2 -0	Trig OFF	Lag OFF	Smpl KYBD	

'Orkestra' is an excellent sounding patch which, as its name implies, sounds like an orchestral combination of brass and strings. According to Michael, "to really sound like a full orchestra, this patch needs to be layered with a good horn patch. By itself, however, it does sound like more than just a string ensemble." He mentions that the patch was created using an XK keyboard and a 6R so the velocity rates may need to be changed for the keyboard version Matrix 6. Well done. ■

PATCH WARE

NEWS AND REVIEWS of the latest in commercially available patches and sounds is what Patchware is all about, and this month's column has a bit of both.

First, a bit of news. **Don Peake Music** has announced the formation of **Technosis**, a music synthesis division of the company which was formerly known as Psyche Shriek. Technosis is devoted to the production of patches and samples for Ensoniq products. For more details contact Technosis, c/o Don Peake Music, Inc, 3960 Laurel Canyon Blvd, Suite 353, Studio City, CA 91604-3791. Tel: (213) 656-3515.

The ingenious folks at **NCE** have developed an interesting way to sell patches, **Digital Synthesizer Formulas for the DX27 and DX100**. Each of the formulas takes you step-by-step through the editing and sound creation process and leaves you with a completed patch or patches. In the process they also give you an idea of how these FM synths work. One other nice benefit of the formulas is that each one has parameters which can be set over a suggested range of values so that a single formula can produce a number of different patches.

An introductory kit being offered by NCE includes a 4-Formula reference card, a special template to set on the synth to further simplify the data entry process, and an instruction sheet, all for five bucks. Contact NCE, 7101 N. Mesa, Suite 172, El Paso, TX 79912. Tel: (915) 533-4014.

Korg DW8000 owners should be happy to know that **Angel City Audio** offers several volumes of sounds for their prized possession. To purchase the company's sounds, you first buy a membership to its user's group, which includes Volumes 1 and 2 (64 sounds each) in cassette data tape format (the only type available). Membership also includes an informative eight-page programming guide, an occasional newsletter that has information on new software updates, reviews of sound editing programs and other relevant information; and other benefits. Members participate in a sound exchange program and are eligible to send in their own sounds for inclusion on compilation data cassettes that are made available at nominal costs. Two of these 64-patch tapes, Volume 3 and Volume 6 in the library, have already been released for a very reasonable $2.50 each.

Volume 4 consists of 64 new documented sounds as well as 128 undocumented sounds on the back side of the tape. Volume 5 contains two tapes which have the same sounds as Volumes 1, 2 and 4, but which are reorganized into sound categories, such as organs, strings, electric pianos, etc. Finally, Volume 7 is the most recent release of new sounds for the instrument. It features 64 documented sounds on one side of the tape

and 64 undocumented sounds on the other. I personally don't care for the idea of undocumented sounds because though the company may view them as extra goodies thrown into the deal, I see it as an unfinished part of the package.

Complaints about documentation aside, the quality of the sounds offered by Angel City is generally pretty good. I spent some time listening to and playing with the sounds in Volume 5 (the compilation of Volumes 1, 2 and 4) and Volume 7 and found that though there was a bit too much repetition of similar sounds for my tastes, there were some excellent individual offerings. The DW8000 is particularly suited for organ and electric piano-type patches and there are quite a few of both available on Volume 5, some of which are very good imitations of B3 and DX7 Rhodes sounds. The wide variety of fairly similar sounds did not bother me in this case because many of the variations have their own peculiar character. The generally mediocre string sounds, on the other hand,

DX27 DX100

Digital Synthesizer
Formula 1a

STEP	SEQUENCE	DISPLAY	RANGE
1	FC, 7, +1, +1		
2	1, [3]	e1111 ALG= 3	
3	23, [C 2]	e1111 MID.C=C 2	
4	16, [5]	e1111 D1R= 5 OP1	
5	17, [14]	e1111 D1L=14 OP1	
6	18, [4]	e1111 D2R= 4 OP1	
7	19, [5]	e1111 RR = 5 OP1	3-9
8	21, [1]	e1111 RS = 1 OP1	
9	22, [50]	e1111 LS =50 OP1	
10	ST: BB	EG Copy OP1→OP2	
11	ST: BC	EG Copy OP1→OP3	
12	ST: BD	EG Copy OP1→OP4	
13	PB, 20, [70]	e1111 OUT=70 OP2	60-80
14	PB, [60]	e1111 OUT=60 OP3	50-70
15	PB, [60]	e1111 OUT=60 OP4	50-70
16	PB, PB, 14, [-3]	e1111 DET=-3 OP2	
17	PB, [+2]	e1111 DET=+2 OP3	
18	PB, [+3]	e1111 DET=+3 OP4	
19	PB, 13, [2.00]	e1111 F= 2.000P1	
20	PB, [6.00]	e1111 F= 6.000P2	
21	PB, [4.00]	e1111 F= 4.000P3	
22	PB, [12 00]	e1111 F=12.000P4	
	REPEAT:		
23	PB, [•]	e1111 F= OP1	100-400
24	PB, [•]	e1111 F= OP2	400-900
25	PB, [•]	e1111 F= OP3	200-1400
26	PB, [•]	e1111 F= OP4	1100-2595
27	FC, (24, [•])...		
28	12, -1	f M.Protect:off	
29	IN, ST:nn	Mem Store ??→nn	
30	FC, +1	F M.Protect:on	
31	IN		

nce   7101 North Mesa, Suite 172   El Paso, Texas 79912

NCE is offering Synthesizer Formulas which take you step-by-step through the editing and sound creation process.

often have only minor differences (like small tweaks in the VCA EG) which don't seem to justify new patches. The similarities may not be as obvious when stepping through the patches in Volumes 1, 2 and 4, but because the sounds are grouped together in categories in Volume 5, they quickly became apparent there. Now that's not to say that the string sounds are all bad; some are quite usable and others, such as the ensemble-like Orchestra 1, are excellent.

The DW8000 is not renowned for reproducing acoustic instrument timbres and so, not surprisingly, some of the attempts at recreating them in Volume 5 are not successful. The package does have a number of very punchy bass and brass sounds, however (but watch out for some of the excessive aftertouch modulations). Other highlights include the poorly-named but excellent sounding Log Drum Flute, the very fat Analog Brass and the bell-like DX7 imitations.

Volume 7 continues in the same vein as the previous ones, offering a variety of excellent organs and electric pianos as well as some interesting, though not particularly useful, sound effects. The package also includes a few nice lead sounds, some brass and string patches and some attempts at splits and layers. The DW8000 does not directly offer this capability but programmer James Fellows tries to squeeze a few of each out of the instrument anyway and, in a few cases, does fairly well.

All in all, the patches in the Angel City library represent a fairly good cross-section of the types of sounds possible with the DW8000. You'll certainly be able to find a number of sounds that you should be extremely happy with and even more that should serve your needs. And if you're not happy with them, the company actually has a money-back guarantee, so you can't go wrong. In combination with the services provided via membership in the user's group, they are excellent value.

The price for membership and Volumes 1 and 2 is $25, Volume 4 is $12.50, Volume 5 (which is only available to owners of Volume 4) is $4.50, Volume 7 is $17.50 and membership with the complete library of Volumes 1-7 is $60. For more information contact Angel City Audio, 2 Liberty Place, Middletown, CT 06457. Tel: (203) 347-5166. ■
BO'D

OFF THE RECORD
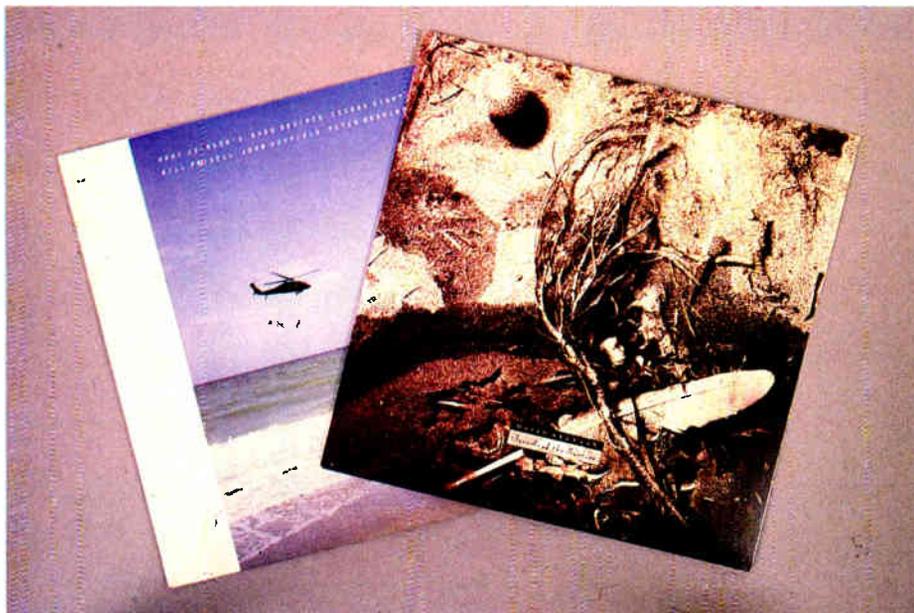
Marc Johnson's Bass Desires
Second Sight
ECM

THE DEBUT RECORD by Bass Desires, the highly talented quartet led by acoustic bassist Marc Johnson, made my top five list of records in 1986. The follow-up record is more than a building of the passion shown on the first record – instead it takes all of the qualities that made Bass Desires one of the most exciting groups in contemporary jazz and adds both mystery and an unexpected sweetness to the mix.

Bass = Desires features two acoustic musicians, Marc Johnson and drummer Peter Erskine, and then adds on electric guitar the blues filled passion of John Scofield and the incomparable Bill Frisell. Frisell is the quality that takes Bass Desires to the top of the heap: his use of guitar synthesizer and multi-effects is so far beyond anything anyone else has done that you wonder if he is in fact not of our planet. (I don't really mean to suggest he is an alien life form, but it would explain a lot if he were.) The interplay of Scofield's burning legato lines against Frisell's waves of chords present the listener with a serious choice each time he/she/it sits down to listen to Second Sight. Do you listen to the rhythm section of Johnson's well-rooted and melodic bass and Erskine's highly interactive drumming, or do you focus on the guitar lead, or the guitar comping, or the overall ensemble? You will

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need multiple listens to appreciate this album, but it is well worth the work.

The first time I listened to John Scofield's composition "Thrill Seekers," I was wearing headphones and leaped to my feet screaming when I realized that a huge hornet had crept into one of the phones. It turned out to be Frisell playing the weirdest and creepiest guitar line I have ever heard, and when it continued to hum through my mind I realized that I was hearing something unlike anything I had ever heard before. 'Crossing The Corpus Callosum,' the opening track, begins with a driving groove which stops suddenly and turns into a prolonged series of feedback, digital delay and whale sounds, as Peter Erskine plays a sequence of building up and down drum rolls. I don't know if I understand this song, but I like it a lot, especially as it starts the record off with a sense that anything could happen.

The overall quality that comes from Second Sight is oddly enough a sentimental sweetness created by the four musicians on a series of five songs. 'Small Hands' and '1951' by Frisell are so moody and sad that when Scofield plays a chord or Frisell a lead the emotions it evokes are profoundly moving. Erskine's tune, the aptly-titled 'Sweet Soul,' is equally powerful with sensitive playing by Erskine and Johnson. Johnson's piece for solo bass, 'Prayer Beads', sounds like a Pablo Casals performance with a high degree of fire and subtlety. The final song on the album 'Hymn For Her,' features all four of the musicians in a meditative mood – maybe

mode is the word I want. Johnson again plays his solo in a way his former leader Bill Evans would have approved of, while Frisell and Scofield show why they are among the best guitarists in jazz today. ■ *Adam Ward Seligman*

David Sylvian
Secrets of the Beehive
Virgin America

JAPAN HAS ALWAYS been a land of mystery, art, new fashion trends, and hi-tech gear. So when a British band named themselves Japan, they had a name to live up to. Other than the fact that a high percentage of their songs were about China, they came close, weaving everything from ethereal ballads to mysterious dance tunes. David Sylvian, the voice and credited composer of Japan's material has continued the mystique on his solo albums. David's latest release, *Secrets of the Beehive* contains more of the heavy atmospheres found on his previous albums, *Brilliant Trees* and *Gone to Earth*, but less production. The lack of massive reverb or wild delays make this a very clean and concise recording.

Acoustic guitar and piano are the core of the record, with trumpet, synths, percussion, strings and some electric guitar, to fill out the sound. David Sylvian plays several instruments, including guitar and keyboards, but always gathers together several musicians from the world's art music scene. On *Beehive* he has pared down to a small group: Ryuichi Sakamoto, best known for his work with Yellow Magic Orchestra, David Bowie and David Byrne, on keyboards and string and horn arrangements; Mark Isham, of film soundtrack and Wyndham Hill fame (now on Sylvian's label, Virgin), on trumpet; avant-garde guitarist, David Torn; Danny Thompson on bass, Phil Palmer on acoustic guitar, Danny Commings on percussion, and Japan drummer, Steve Jansen.

The style of the tunes vary but all have the cynical Sylvian touch. 'When Poets Dreamed of Angels' has a Spanish feel to it, 'Mother and Child' has a jazzy piano solo, and 'Let the Happiness In' sounds like a depressive Peter Hammill tune, thus varying the album enough to keep you interested. 'Orpheus' is the most likely "single," (lyrics for this song are even printed on the inner sleeve). It sounds happy – until you read the lyrics – with nice synth strings and a trumpet solo after a false end. The production of the album is very crisp and the LP I got for review was very clean (a rarity these days).

This album crosses the line where new age becomes art, and it's excellent if you want something light that won't put you to sleep. Sylvian's music and lyrics are always intriguing if not haunting. Check it out! ■ *Rick Huber*

READERS'
TAPES

Reviewed by Yung Dragen.

M U S I C

THIS PAST WEEKEND, I decided to rip apart, rearrange, and rewire my studio. During that same weekend, the Santa Cruz mountains in which I live got nailed by a rather impolite set of winds, and I found myself without electricity for two days. Besides upsetting my karma, this really drove home the point that the one thing that ties together all of what we do (these four tapes included) is electricity – if not in the creation of sounds, in the recording and distribution of them.

Which is really the only thing that ties these four tapes together.

First up is a C90 of mostly originally composed classical music by 85-year old (no, that's not a typo) **Walter Dana** of Miami Beach, Florida. Originally from Poland, Mr. Dana started his career in 1925 as
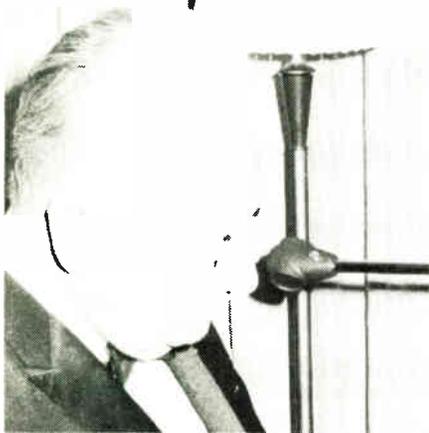
Walter Dana

"accompanist and musical illustrator" for the then-famous Warsaw review theater "Qui Pro Quo." In 1930 he scored Poland's first talking movie, *10 From Pawiak*. In 1940 he moved to the US, and in 1945 started Dana Records, specializing in Polish polka music and eventually broadening to international music. By 1952 his label was ranked by Billboard as third only behind Victor and Columbia. Today, Walter is retired and composes music in his living room studio with a Steinway Model S, Yamaha DX9, Korg 558, and Arp Omni and Pro Soloist, performing and engineering his own compositions. No longer working for theater or film, Mr. Dana states in his letter, "No vocals. All illustrative meanings I convey by music only."

I rather enjoyed two of the four compositions he submitted – 'E.S.P. (Opus 46)' and 'The Americans (Opus 42).' The first is a gentle classical piece with some nice moody themes (I particularly liked the piano solo first movement); the second leans almost towards cabaret, recalling the style of Copeland. I found 'Pegasus (Opus 45)' too cheaply dramatic for my tastes, but the counterpoint between the different instruments reminded me of a common

technique lost today in the land of two guitar bands and four chorus songs. 'Chopin On Chips' also didn't agree with me; I like Baroque, early romantic, and Russian bombastics, but not the lightness of Chopin. I also occasionally had a hard time getting along with the poor imitative timbres of the Arps, and Walter's compositions in general lean a bit towards the syrupy in their dramatics and romanticism. The recordings were also quite often awash in white noise. However, the piano was beautifully stereo miked and played. I personally find it quite nice that this new-fangled thing, electronic music, allows people to continue down a path they started on long ago, under different circumstances and with different means.

Which leads us, interestingly, into a different tangent on that very same theme. Sequencers are often touted as allowing non-musicians the ability to play music, with the inference that the "non-musicianship" comes in the form of lack of chops (with actual musical talent or inspiration left well out of the discussion). What if one has the talent, inspiration, and *had* the chops, but can no longer use them? Such is the case with **Travis Charbeneau** and his demo *Spectral Analysis*. Mr. Charbeneau, now 42, used to play guitar professionally (oddly enough, in Miami, near Mr. Dana) until arthritis crippled his hands. Undaunted, he took up computers and MIDI, composing some of the pieces he submitted with the eraser-end of a pencil while recovering from reconstructive hand surgery. Travis currently makes his living as a writer and doing some film work, "so I'm naturally interested in scoring as well as pop superstardom."

He categorizes himself as "playing 'New Age Elevator,' since it's sort of space rock, but highly thematic and generally dependent on a hook." Indeed, this is instrumental rock interchanging a variety of influences through the cuts with a slight but not unnerving muzak veneer. There's fairly hot synth or sampled fuzz guitar leads on almost every cut. What is most fascinating is the amount of "human feel" and particularly performance control (aftertouch, velocity variations, pitch-bend, etc) throughout – I will be much harsher from here on out on those *with* full
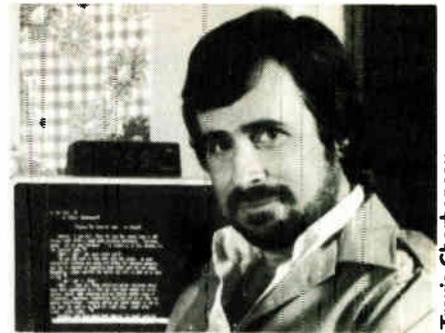
Travis Charbeneau

physical facilities who continue to make lifeless machine music. It overcomes what some may consider fairly low-end equipment – "the ubiquitous CZ101, a DX100, an S10 sampler, TR505 drum box, 360 Midi Bass, an ART ProVerb with some Boss pedals and the little Boss mixer."

Spectral Analysis was recorded using Voyetra's Sequencer Plus III and was recorded straight to master tape (and sounds quite clean for it). In the final analysis (no pun intended), this leans a little too much towards wallpaper music for my tastes, and the leads need to be mixed down a bit; but if you liked the Peter Bruce tape I reviewed back in October, you'll really like this.

Could we get through a month without reviewing a new age tape? C'mon; you knew we couldn't. This month's entry is *Earthzone* by **Zon Vern Pyles**. Although Zon lists his style as "Neo-Berlin School, New Age, Electronic Instrumental," this is very firmly spacey, stereotypical new age in the style of Paul Horn or Steve Halpern as opposed to anything that resembles Tangerine Dream or Michael Hoenig. What is interesting is the large amount of vintage equipment used on this tape – Moog Sonic Six, Yamaha CS01, and two Sequential Pro Ones alongside a Mirage and a Poly 800. It in no way sounds dated – perhaps it's the choice of buzzy tones over sickening filter wahs, with liberal sprinkles of vocal, sitar, and tabla samples. Among Zon's credits is scoring the 1986 film *Battle for the Lost Planet*, and there is a bit of sci-fi among the spaciness – though thankfully not over-stated. This is certainly not a bad release, and it's sprightly enough in places not to be boring, but it certainly just fits into the crowd

Zon Vern Pyles

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as opposed to standing out from it as Crow or Van Handel does. Am I becoming superficial? Jaded? Must I always have something new? Is that good or bad? What will it do to my karma?

Jaded is how I started out when listening to *Bound to Play* by **The Role Models** (the cover art even features hands rope-tied over a keyboard – cute, huh?). This is one of those '80s media bands that actually has a video out before cutting their first record (albeit, the record is due out by the time you read this). The first cut, 'L.A. Time,' sounds like typical female party band surf rock, complete with out-of-tune vocals. The second, 'Grains of Sand,' doesn't promise much better – a cross between synth and surf rock with both man and woman (**Hazlitt Krog** and **Gina Temple**) singing out of tune and rather unimpassioned, despite the social lyrics about "too many people." When Gina counts in the third cut ('Cry If You Want Too') out of time with the actual beginning, I really start to cringe, the word "contrived" coming to mind (it is said that the Japanese count in all their songs at the same tempo not for rhythm, but to synchronize their breathing – somehow, I don't think that's the intention here). However, this moodier song is served by things like the distorted synth bass (which was merely something different, as opposed to something better, on the previous cuts) and actually features some mood swings, as opposed to same-temperature-throughout.

Best of all, this duo suddenly shines on what seems to be their theme song – 'Electric Living (Edison's Lament).' The buzzy bass (I *do* like fuzz bass – anybody remember Hugh Hopper?) is way up front and growling, along with an urgent synth melody line and an insistent drum pattern (almost enough to forgive the dreaded sixteenth notes on the hi-hat). 'Electric Living' recalls mid-period Ultravox in power and speed. Aside from singing and all-too-familiar repetitive drum patterns, these two are indeed competent at their instruments (guitars along with keyboards). Half their work shows promise, while the other half sounds like a copy of what we had to deal with in pop a couple of years ago – like they want to be original and vital, but can't always. A proverb about the relative strengths of body and mind is recalled . . .

Next month, we'll take a few guitars alongside our green tea and synthesizers, thank you. Until then, beware of rude winds.

■

Contact Addresses:
Walter Dana, 824 83rd Street, Miami Beach, Florida 33141
Travis Charbeneau, 404 Merrimac Trail, Suite 4, Williamsburg, VI 23185
Zon Vern Pyles c/o Synthspan Productions, PO Box 685, Scottsdale, AZ 85252-0685
Role Models c/o Paint The World, PO Box 233, Scarsdale, NY 10583

Send your demotape, along with some biography/equipment details and a recent photo if you have one, to: Reader's Tapes, Music Technology, 7361 Topanga Canyon Blvd., Canoga Park, CA 91303.

MT MARCH 1988

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