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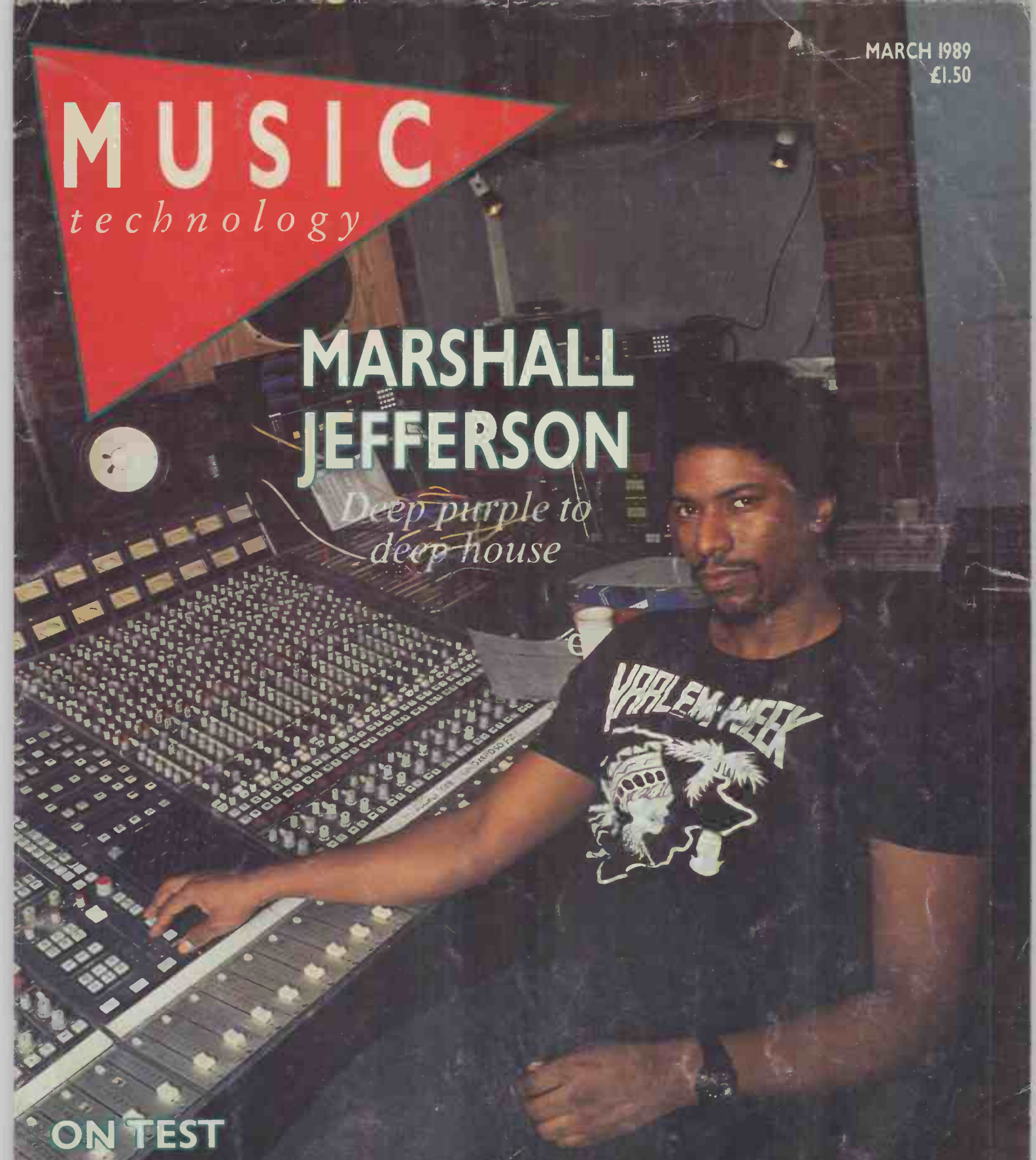
MUSIC technology



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CD-quality (‘kampaekt disk ‘kwaliti) *adj.* a description of the R-8’s 120 drum and percussion samples (including a ROM card facility).

feel (fi:l) *n.* the quality of or an impression from something perceived through feeling [cf. ambience, atmosphere].

flexible (‘fleksibel) *adj.* adjustable pattern length (1 to 99 bars) along with programmable Repeat Marks, Tempo Change and Level Change.

friendly (‘frendli) *adj.* the ability to record in Step or Real Time, and to modify or edit with features like Reframe, Copy, Instrument Change, Merge and Append.

generous (‘dzeneres, ‘dzenres) *adj.* a programmable memory of 10 songs (a total of approximately 2600 notes); a built-in library of 32 preset patterns in addition to an internal memory sufficient for 100 programmable patterns.

human (‘hju:men) *adj.* having the attributes (esp. a soul) of man as opposed to machines; natural as distinct from contrived.

human feel (‘hju:men fi:l) *n.* the subtle variations of dynamics, timing, accents and tone that epitomize the performance of a live drummer.

independent (,indi’pendent) *adj.* 8 individual outputs in addition to Stereo outputs.

individual (,indi’vidjuel) *adj.* characterized by unusual and striking qualities. The Roland R-8 Human Rhythm Composer.

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IN PURSUIT OF PERFECTION

BEFORE WE BEGIN, let's get one thing straight – I'm not trying to discourage anyone from doing their damndest to do anything. And why should you think I'm trying to do such a wicked thing? Because the Pursuit of Perfection can have some unfortunate spin-offs and we're going to talk about them, that's why. And before you get the wrong end of another stick, you're not about to get an earful of the interminable "music and technique" argument either. Now we can be friends.

Instead, let's begin with computers. Perfection is such an easy concept for a computer to deal with – to a computer either something's right or it's not. That's how data checksums work, after all. Life can be made so simple when you're trading only in "1"s and "0"s as a computer does. Imprecise human beings persuade computers to apply their "1s & 0s" philosophy to all sorts of indeterminate human activites – like making music. Let me give you a couple of examples: having recorded the rhythm parts to a piece of music and thrown your sequencer into Record, you "go for a take" on a solo. You might even like to go for several takes as you would when recording onto tape. But then your sequencing software invites you to begin editing out all the mistakes and imperfection – and the human aspects? – from the performance.

Meanwhile, in an attempt to overcome the callous accuracy of the computer, the human beings responsible for its programming instruct it to chop a bar of music up into hundreds of tiny sections so that the imprecise musician can place his notes in a convincingly imprecise manner. What do the musical fraternity do but try to analyse their inaccuracies and turn them into rules that can be applied to "create feel" in a piece of music. The elements of chance and spontaneity – the very things that computer programmers are trying to restore to musicians using computers – are being used to formularise it.

IT WOULD BE easy to continue giving examples of our crusade as musicians to misinterpret what software writers and technology are offering us, but our Pursuit of Perfection is not confined to our attitude to modern instrumentation. Let's take a look at today's pop songs. To date there have been several generations of young musicians seeking a mythical pop-song formula with the conviction of the ancient alchemists when they sought to transmute one element into another. Somehow today's technology lends itself to this constant rearranging of music, almost implying that there is a "right" way to do it. But why should there be only one way to present a song? The host of late '80s "remixers" certainly wouldn't agree, nor would the sampling fraternity, nor would Frank Sinatra. Nor should they.

Too often it seems that where technology is able to liberate us musicians we use it to restrict or misguide ourselves. And we're still claiming that the developers of software and hardware aren't listening to our pleas. ■ Tg

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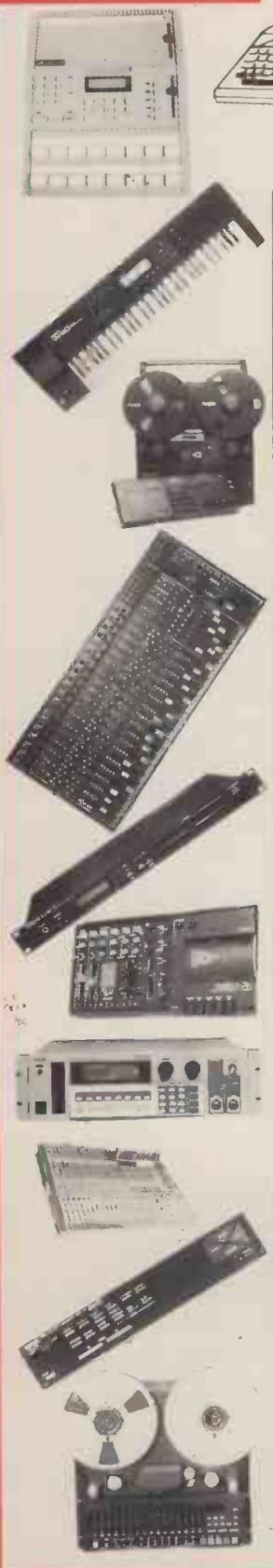

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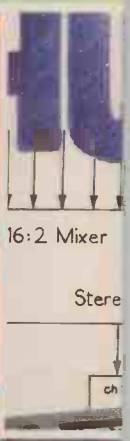

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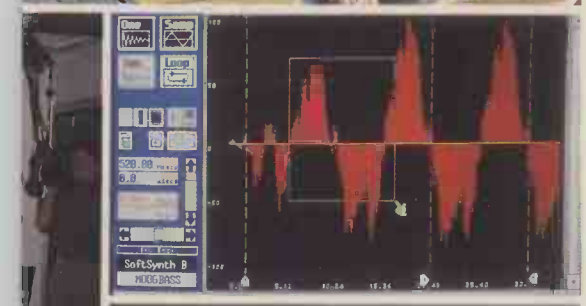

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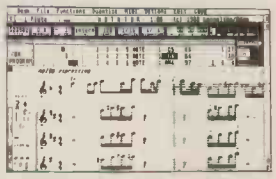

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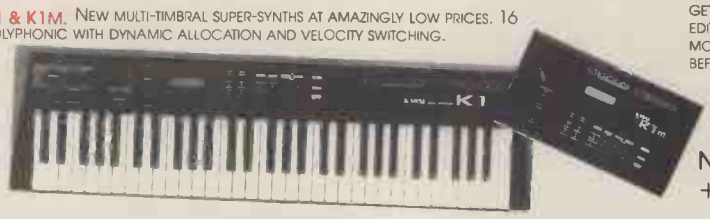

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HI!

IT'S BEEN A WHILE SINCE WE DESCRIBED OURSELVES TO YOU, SO HERE GOES. AT FUTURE MUSIC CHELSEA WE REMEMBER YOU ARE THE MOST IMPORTANT COMPONENT IN OUR BUSINESS - WITHOUT YOU WE HAVE NO BUSINESS. WHEN YOU COME TO US YOU CAN FEEL CONFIDENT THAT WE WON'T JUST SELL YOU A PIECE OF EQUIPMENT BECAUSE WE DESPARATELY NEED TO UNLOAD GEAR THAT'S YESTERDAY'S NEWS. WE WANT YOU TO HAVE THE EQUIPMENT THAT YOU ARE CONFIDENT WILL DELIVER THE SOUND AND PERFORMANCE YOU REQUIRE - IT IS ONLY THAT WAY THAT WE CAN BE CERTAIN OF YOU COMING BACK FOR MORE.

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SMOOTH OPERATOR

Ever used a computer on stage? Ever had it crash on you? If not you are in a very fortunate minority. High voltage transients and sudden voltage variations can cause all sorts of trouble for any hi-tech equipment – computers being particularly vulnerable. Irregular mains supplies are a standard feature of every household, and at gig venues it's even worse. If you're running a sequencer on the same ring main as the lights and PA system you are asking for trouble.

Mains filters are nothing new, but they are an effective way of solving the problems associated with the unreliability of our national grid. What is news is the fact that they have suddenly become affordable, thanks to a company called Lynwood Electronics. Lynwood produce three different systems which retail at £44, £149 and £449 respectively. They store energy on a built in capacitor to tide over any gaps in the mains, while a voltage clamp attenuates voltage transients as soon as they exceed 240V. As well as their use with musical instruments, mains filters work well on improving TV picture quality and reducing background noise in hi-fi systems. If a current can drop long enough to make a light bulb flicker, there's no limit to the potential damage it could do to delicate electronic circuits.

For more information on Lynwood Mains Filters, write to: Lynwood Electronics, Coley Lane Farm, Wentworth, Rotherham, South Yorkshire S62 7SQ. ■ *Db*

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To the musician, obvious applications include jack plugs, mixing desks, patchbays and anywhere else where contacts may become contaminated.

Stabilant 22 is used to increase the reliability of contacts, figures of 10-fold to 100-fold being common. It imparts the reliability of a soldered joint to any electro-mechanical connection without forming a physical bond.

For further information on the solution, contact Sound Technology plc, 6 Letchworth Business Centre, Avenue One, Letchworth, Hertfordshire SG6 2HR. Tel: 0462 480000. ■ *Db*

FZ1 CLUB NEWS

Casio FZ1 owners who have joined the FZ1 Club now have access to over 100 disks of samples, for the price of a blank formatted disk and a £3 handling charge. The library also includes optional software for the FZ1 which the club is the sole distributor for in the UK. This includes OPT1, a real-time sequencer; OPT2, a directory showing disk information, bytes used and bytes free, thereby optimising disk usage; and OPT3 a loop tool providing new looping operations including cross-fade and auto-looping functions.

In addition to this, the club is also distributing Hybrid Arts GenPatch configurations for the FZ1/FZ10M allowing an FZ1 to dump data to an Atari ST. There is also a help line where members can call for advice on problems and a monthly news letter brings info, hints and tips. Membership for a year is £25, and owners who send a blank DS/DD disk with their membership fee will receive a free set of samples with optional sofware demonstration sequences and details on how to use DS/DD disks in a HD only FZ1.

For further details, contact Mark Tinley, FZ1 Club, 454 Muswell Hill Broadway, London N10 1BS. ■ *Db*

E! BAH GUM

Owners of either a DX7 or DX7II will be pleased to discover cheaper upgrades for both are now available. Gozen Studios have reduced the price of E! for the DX7 and DX7IID/FD from £299 to £199 and £399 to £299 respectively. E! for the original DX7 comes with a preset voice library of 256 voices in addition to the 320 RAM slots. For the DX7II, E! provides eight-voice multitimbrality, an onboard 16-track sequencer, MIDI monitoring and enhanced microtonality capabilities. E! is manufactured by Grey Matter Response and distributed in the UK by Gozen Studios, 86b Endlesham Road, London SW12 8JL. Tel 01-675 7371. ■ *Db*

REMOTE CONTROL

Due to the continued popularity of their AZ1 portable controller keyboards, Casio UK have secured a limited quantity for sale at £349. The company emphasise this is not a relaunch, as the AZ1 is no longer being made. For further information contact Casio UK, Unit 6, 1000 North Circular Road, London NW2 7JD. Tel 01-450 9131. ■ *Db*

HARDCORE SOFTWARE

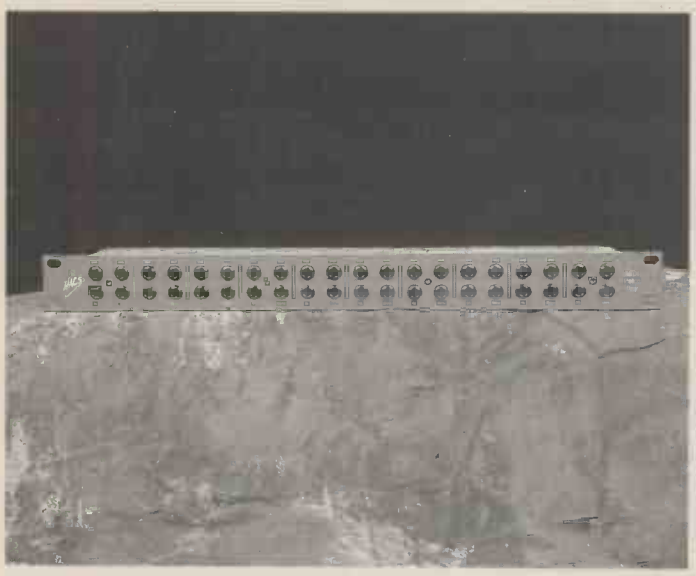
A new range of MIDI software is being launched by HardCore under the Umbrella title of Data Dumper. This offers the facility to store individual or bank synthesiser patch data on the ST's disk via the MIDI interface, and load it back when required. The program is intended to be easy to operate, making full use of GEM features, and an invaluable tool for any recording studio or home musician.

The first version of Data Dumper is for the Kawai K1 synthesiser and K1m module and is available now. A Casio CZ101/1000 version will be available shortly with the rest of the CZ range to follow. A Yamaha DX series range is also planned.

Data Dumper prices start at £24.95 for the Casio CZ101/1000 version and £29.95 for the Kawai K1/K1m version. For further information contact HardCore Software, 43B Southbourne Road, Southbourne, Bournemouth, Dorset BH6 5AE. ■ *Db*

MIDI PATCH WORK

Fancy a MIDI patchbay but not entirely sure if you need one? If so, you may find the following of interest: DACS MIDI Patch Bays (reviewed last month in MT) are now available on a 28-day trial period, at the end of which they can be returned for a cash refund less a small handling charge. They cost £116.72 including VAT and P&P, and are available from DACS Ltd, Stonehills Complex, Shields Road, Pelaw, Gateshead, Tyne and Wear NE10 0HW. There is also a phone number for further information and sales to holders of Access and Visa cards. That is 091-478 5585. ■ *Db*



SALFORD SCHOLAR SUCCESS STORY

The start of the new term in 1989 saw the arrival of Salford College of Technology's first research scholar. Melvyn Poore is the man, a fine instrumentalist who has joined the Department of Performing Arts and Media Studies.

Mel's research is with the Composers' Desktop Project (CDP) which aims to "release the secrets of music computing and make the wonders of music synthesis available to students and musicians through software programs" – comparable to the effect desktop publishing has had on written communication.

The Department of Performing Arts and Media Studies is a national leader in the teaching of recording and electro-acoustic music techniques with a fine team of lecturers and state-of-the-art studios.

Head of Department Keith Wilson comments: "I am delighted to welcome Melvyn into my Department, which is now established as a research base. I am determined that what we have achieved here in Salford and the North West will go from strength to strength. Our next exciting developments in this high-cost field of music technology need to be in cooperation with regional forces and with industry through sponsorships. Education can no longer go it alone. This is a centre of excellence with which major commercial interests could be proudly associated."

Anybody interested in taking things further can contact Keith Wilson at: Department of Performing Arts and Media Studies, Adelphi, Peru Street, Salford, Manchester M3 6EQ. Tel: 061-834 6633 ext 231. ■*Db*

WHAT A BOFFIN

The smart Alecs at York University have been beavering away working on advancements in musical technology, and now they have something to show for their efforts. Music Technology Group Researcher Andy Hunt has created a completely new and original musical instrument called MIDIGRID. This is currently beng touted as "one of the major musical and computing breakthroughs of the '80s" and is based around the Atari ST range of computers. It has been developed by Andy in association with Ross Kirk and several members of the Composers' Desktop Project, including Richard Orton.

The main screen features a band with five symbols, gateways for note input, box editing, sound and channel selection, specialised functions and recording. Vertical and horizontal lines mark out a grid of empty boxes which are filled by the user with either new or existing work. The boxes can contain single notes, chords or sequences, entered by playing the grid itself or an external MIDI instrument. The sounds are produced by any MIDI equipped device.

The theory says that the MIDIGRID user is a performer. The computer's mouse moves a cursor from box to box. The musician plays the contents of the boxes selected: left button down-and-hold sustains the contents of one box; right button down-and-hold and the contents of several boxes can be played by moving the mouse/cursor from one to another. This enables chord progressions, arpeggios and rhythmic sequences to be played very easily.

For the amateur or professional composer with access to a wide range of MIDI equipment, MIDIGRID facilitates the performance of certain effects and helps to create sonorities, melodies and harmonies. It is also possible to make complex textures or mix live performance and playback of pre-defined material.

For the physically handicapped, MIDIGRID is extremely simple to operate and a very welcome opening to the world of musical technology. The simplicity of the two-button mouse is currently being emulated in a variety of ways to suit a wide range of disabilities. Given a suitable device, the smallest motions are enough to control the entire program, including all the design features. MIDIGRID has already been used with enormous success by many disabled people, as well as finding use in therapeutic work in several hospitals.

MIDIGRID is currently available from the Composers' Desktop Project, and runs on any Atari ST computer. Further information can be obtained from the CDP by ringing (0904) 623696. ■ *Db*

CALLING SYNTH HEROES

Synthesiser music specialists AMP records are calling for new bands and artists to get in touch regarding the UK Electronica '89 Festival and their continuing series of compilation albums.

The 1988 UK Electronica was the first to be organised by AMP and the first to be held in London. It attracted a record crowd, and was felt to be a great artistic success by those involved. Plans for the 1989 show, which will again take the form of a one-day festival featuring a number of synthesiser performers in a variety of styles, plus a sophisticated audio-visual and laser display, are now being made. If you missed the '88 show and would like some indication as to what it involves, a two-hour video of highlights is available from the address below. Meanwhile, AMP are seeking new acts for inclusion in UK Electronica '89. Interested parties should send tapes, photos and biographical material directly to AMP (not to us, thank you). The address is: AMP Records, PO Box 387, London N22 6SF. ■ *Db*

ALL CHANGE

Evenlode Soundworks have made the decision to concentrate exclusively on the sales, marketing and support of products from Steinberg Software, Hardware and Digital Audio Gmbh. All products and companies previously handled by Evenlode, including Digidesign, DDrum, Passac and JL Cooper will continue to be fully supported by newly appointed distributors.

In the case of JL Cooper and Digidesign, the new distributor is Sound Technology plc, who currently also handle Alesis, Aphex, Oberheim and C-Lab in the UK. Sound Technology can be contacted at: 6 Letchworth Business Centre, Avenue One, Letchworth, Herts SG6 2HR. Tel (0462) 480000. Evenlode Soundworks are at The Studio, Church Street, Stonesfield, Oxford OX7 2PS. Tel: (099 389) 8484. ■ *Db*

COMMUNIQUÉ

Write to: Communiqué, Music Technology, Alexander House, Forehill, Ely, Cambs CB7 4AF, including full address and a day-time phone number. A free year's subscription if yours is the Letter of the Month.

Dear MT

Patching Up

Following Vic Lennard's review of the DACS MIDI Patchbay, I would like to address some of the points he raised.

The review model was despatched in a single-thickness cardboard box with no packing or protection. Any device sent in this way will inevitably suffer damage. This does not reflect the strength of construction. When I send MIDI Patchbays through the post or via carrier, these boxes are carefully wrapped and protected to prevent such damage.

One of the Patchbays has, in the last 12 months, been on three British and European tours with the keyboard player in Martin Stephenson and the Daintees as well as constant gigging and studio work between tours. We all know the kind of treatment touring equipment gets, and he has certainly had no problems either with the front panel pulling away, or with short circuits.

The MIDI 1.0 spec requires opto-isolation mainly due to the fact that many synthesisers are double insulated and the 0V earth reference is missing. This means that two problems can arise. The first is that large potential differences may exist between 0V lines, the second is that of high-level digital noise.

The DACS MIDI Patchbay links all the 0V lines and thus virtually eliminates the first problem. The second problem can be eliminated by removing the pluggable earth links. In practice neither of these problems has arisen. At the Projects UK access studio in Newcastle-Upon-Tyne, where all ten pairs of MIDI Ins and MIDI Outs are in use continually, they have had no problems at all in the six months or more that they have had one of our MIDI Patchbays.

Another factor in the contravention of the MIDI Specification is one of cost; to opto-isolate, and therefore power the unit, would probably double the cost of the unit. Its very high level of performance in the field and under rigorous test conditions has made this seem unnecessary.

Visiting nearly all professional and semi-professional studios you see patchbays for audio inter-connections. They may have been around for a long time, but there are good reasons for this method of inter-connection still being with us.

The main advantage (apart from cost) that the DACS MIDI Patchbay has over conventional units is the rapidity and ease with which you can see exactly what is connected to what, even in the proverbial bird's nest situation, and the speed with which new connections can be made and checked.

In a single-user environment, programmable units have advantages, but you still have to reconfigure whatever system you are using. In a situation where a number of users will be involved, the simplicity of the DACS MIDI Patchbay's operation far outweighs the advantages of memories. In the Projects UK studio this quality is the one they consider to be most important, and certainly not old-fashioned or cumbersome.

■Douglas Doherty
Digital Audio Computer Systems Ltd
Cambridgeshire

Dear MT

Anybody Out There?

Jan '89 - Citizen Highman reads interesting demo review on page 61 of Music Technology magazine. Citizen Highman, possessing similar interest and equipment, decides to contact one Mark Wheeler. No contact address available. Sighing, Citizen Highman puts down favourite magazine and reaches for telephone directory . . . Contact finally made in Pizza Hut.

And the moral of this tale? Music Technology changes lives . . . Eventually.

We demand to know the truth: who are the "DemoTakes" and why don't they print contact addresses?
Yours monthly
■Andrew Highman
Boston
Lincs

PS There are now two happy citizens in sunny Skegness!

The reason we don't generally publish contact addresses is one of security, Andrew. It's not a very reassuring thought that there might be someone out there taking an interest in your hard fought-for equipment with a view to nicking the lot, but it's one worth bearing in mind whilst you're being wildly enthusiastic about your music all the same. However, to prove to you how sensitive we are to the views of our readers, we'll happily publish a contact address or number for anyone specifically requesting it.

Oh, and thanks for clearing up a minor MT office dispute - Bradwell and I have had a long-standing wager on the number of happy people in Skegness. ■*Tg*

Dear MT

Manual Assistance

Is there any chance that you can help me? I recently managed to purchase a Roland MKS7 Super Quartet but there was no manual with it. I phoned Roland to see if they could provide me with a manual but someone there was convinced I had an MKS70 with the nought rubbed off . . .
■Trevor Hollingworth
Burton-on-Trent
Staffs

We can't help you, Trevor, but we know a man who can. A quick call to the ever-helpful Chris at Roland (recovered from the bierkeller, Chris?) secured an MKS7 manual which is winging its way to you at this very moment - with his compliments and ours. ■*Dp*

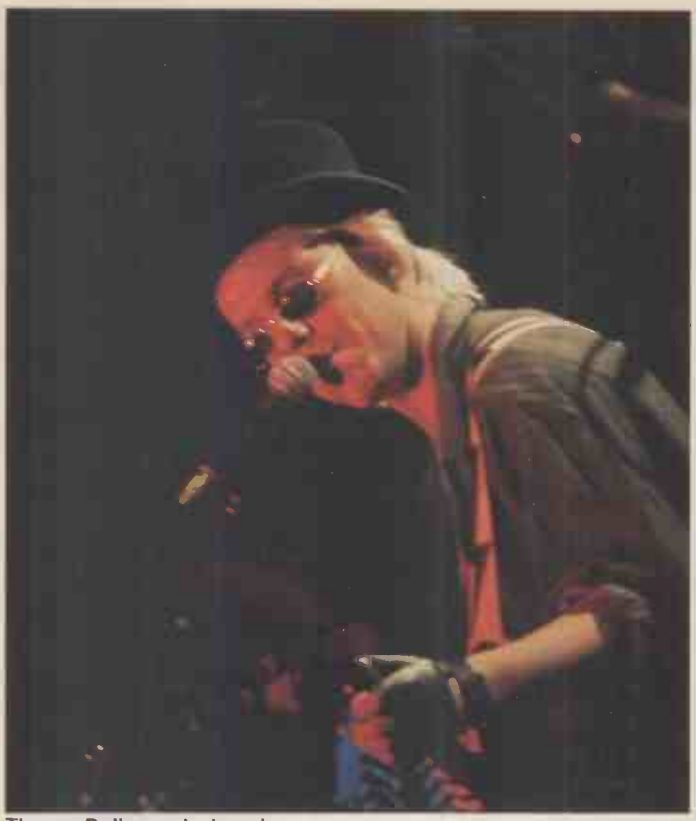
Dear MT

Art and Sound

In the article "Bring The Noise" last month you said the Calrec Soundfield microphone "picks up Ambisonicly". You then explained that this was like quadrophonic but more subtle. Actually, Ambisonics is nothing like quadrophonics.

Ambisonics was invented because the

Green ponders the intricacies of programming the Super Jupiter



Thomas Dolby on the boards

Photography *Tim Goodyer*

inventors realised quad couldn't possibly work properly (history proved them right!). Instead of adding a stereo system to another stereo system, they started by finding out how humans (and even drummers, I suppose) hear and perceive sound directions (a good place to start I'd have said). Then, they designed a range of systems which could preserve sound directions, no matter which way you turned when you were listening. Also, while quad nailed you to a chair in the centre of a room to get the effect, Ambisonics was designed to have a much larger "sweet spot". At the end of the day they had a system which lets you pan sounds anywhere in space, not just somewhere between the left and right speakers.

The soundfield microphone is just a device designed to capture sounds in space, no matter where they come from. It differs from an omnidirectional mic in that it represents each sound direction uniquely. With an omni mic, a sound from in front of you is electrically equivalent to one from your left. There is no way to resolve the direction. With a soundfield microphone you can tell exactly where a sound has come from because it defines directions very precisely. As a result, it is also a mighty fine stereo microphone (it also happens to have extremely good microphone capsules in it). One day those captured sound directions will be reproducable in the home (and home studio). Technically it could be done tomorrow, but things like stereo die hard.

On another subject, I agree and disagree with Tim Goodyer's February editorial. The art has gone from music these days but the industry doesn't deserve to die. A&R men have made one fundamental error: they've assumed that if you give 'em more of what sold last time, you'll sell this time. It's actually in the record companies' interests to take risks and be innovative because making more of what sold last time is a self-degenerating loop. To keep doing well you have to keep taking calculated risks.

As for art - if we, as musicians, were "serious" about our art we'd make one copy of everything, sign it and sell it in an art gallery to the highest bidder. So I say the blame also lies with the musicians.

Another point: OK, you have to "play the game" to get a record contract, but once you've released your first album, scare the hell out of the A&R department with your totally radical second album. If your deal is good the bucks from album one should help feed you when album two hits the A&R fan. Maybe you'll starve anyway, but isn't that what art is all about?

■Michael Topic
Ambisonic Ltd
Chessington
Surrey

I'm not convinced. ■ *Tg*

Dear MT

Jupiter Landing

Thanks to you boys and girls at Music Technology, I now know that I actually own a synthesiser also used by the likes of Thomas Dolby, Scritti Politti, PWL's Ian Curnow and a good bunch of others. I am talking about the now-abandoned synthesiser unit called the Roland MKS80 Super Jupiter.

I bought one in favour of the the OSCar in order to provide some warm analogue sounds to go with my DX7. Three months after I got the Jupiter I bought a second M64C memory cartridge. It was not cheap.

Question: if this is a popular synth among professionals, why isn't it possible to buy some sounds for it? I've checked the columns of MT (and certain other music magazines I won't mention) to find that there are plenty of sounds for all the other synths, but not the Super Jupiter. So tell me, if there are no offers then the interest among customers must be low. Why? And why on earth do all the professionals own a Super Jupiter when they can obviously afford better gear? So where can I send my new cartridge to get it filled with sounds? Obviously not to Ian Curnow or Thomas Dolby.

Perhaps I should take the easy option: sell the Super Jupiter cheap, buy a D50 and pick up a million sounds from people selling sound cards.

■Erik Meyn
Oslo
Norway

Lets go over this again: you've got a Roland Super Jupiter - just like the ones Thomas Dolby, Ian Curnow and Scritti's David Gamson have got - and your problem is that you can't find anywhere to buy sounds for it.

Presumably you like the sound of the instrument (you didn't actually say) and you're eager to have it providing the sorts of sounds that make TD's and Scritti's music so interesting to you. But have you stopped to think why that might be? Where do you think they got their sounds? Yes, the Super Jupiter's in there making nice noises, but they're nice noises that Dolby, Gamson & Co have programmed into them. And that's exactly what you ought to be doing -roll your sleeves up and fill your empty memory cartridge with original sounds.

Go ahead, flog the MKS80, buy a D50 and a bucketful of other peoples' patches if you like. But don't expect them to chase your programming blues away. You'll probably end up wondering why you sound like Brother Beyond. One thing's for sure, you won't sound like Thomas Dolby or Scritti Politti - you won't even sound like yourself. ■ *Tg*

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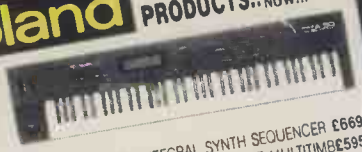

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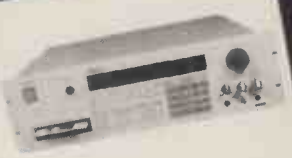

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Roland Super-MRC Sequencing Software

Photography *Rose Rounseville*

AS ONE OF the first and few software-based dedicated sequencers, the MC500 has become popular both in the studio and on stage. Since the release of the initial MRC sequencing software (which comes with the MC500), Roland have released a series of new MC500 programs covering such tasks as song-chaining, SysEx storage and so on. Now they have a new sequencing package for the MC500 MkII and updated MC500s called the Super-MRC.

All the features that were included in the original MRC software have been improved on, or had new functions added, in the S-MRC program. S-MRC has five modes of operation: Standby, Disk, Link, Utilities, and Configuration. Each mode has a menu and sub-menus.

Standby mode contains most of the basic operating commands for the sequence functions: Record, Play, Modify and so on. Eight recording tracks are available, in addition to rhythm and tempo tracks. Rhythm parts can now be entered in real time by "looping" patterns and overdubbing parts from an external MIDI device. A new Mix Record feature has been added which allows you to overdub onto tracks without erasing the original data. S-MRC also features a new programmable ten-point auto-locator and a clearer display readout.

The Edit section is basically the same as before (Erase, Delete, Insert Measure, Merge, Extract, Transpose, Change Velocity, Change MIDI Channel, Quantise and Copy), but with enhancements. Extract now allows you to specify what range and type of data is to be extracted, and whether it replaces or is mixed with data in the designated track. Velocity changes can be rate scaled (higher sounds can be louder and lower sounds softer, or vice versa), and have gradual or immediate crescendo or diminuendo effects. Quantise features new Rate settings that allow you to select exact Quantise resolutions, or slightly "off" settings. Additionally, there are five new edit sections which allow gate time changes, clock shifts, data thinning, track exchanges and Multi Edits. These Multi Edits allow note numbers, velocity, aftertouch values, control changes or pitch-bend values to be companded or reversed.

Microscope mode allows detailed editing of individual events, and it now has a new Event Memory feature which allows you to store individual MIDI events in memory to be recalled later. A new Utilities section contains a Time Calculator (bravo!) which calculates segment times in minutes and seconds, including programmed tempo changes. This mode also has Data Check and Tune Request facilities.

An option called Real Time Modify allows you to edit gate time or velocity information in real time from an external MIDI controller. This can be performed using pitch-bend, velocity, note range or control changes to modify existing velocity during playback – or by using one finger to rewrite steps in real time. Other features include a Song Link option, and a separate mode for system configuration settings (which can be stored on disk). There is also a conversion function that allows you to convert data recorded on the original MRC program over to S-MRC, but it can't be converted back. (The logical way around this is to borrow another MC500 and use your own MC500 with S-MRC to edit your work, and play it back into the other MC500 using the original software.)

I put the S-MRC through two exhaustive production projects that used most of its features and for the most part it put in an exemplary performance. At first, I had some problems with keyboards "freezing", but discovered that it was due to the programmable system configurations – they have to be set for your own particular layout so that you aren't echoing MIDI data. There does seem to be a bug in the program which causes the MC500 to ignore edit commands from time to time. Thankfully, nothing caused a complete crash, so the final work didn't suffer in the least.

By the way, users of the original MC500 or MC300 should know that this software will work on your unit, but Roland don't recommend it because it eats up some of the RAM that was formerly available for data storage and it's very slow because of multiple disk accesses. This program was intended to run on the more powerful MC500 MkII for delay-free editing, but MC500 owners can have an optional memory update (OM500) installed in their units to turn it into a Mark II if they desire.

One final (common) complaint: the owner's manuals (there are two) are full of typos, and some things didn't quite make the translation into English (the explanation of the Gate Time Ratio's functions on Page 189 is exquisitely baffling).

All in all, I think that Roland's Super-MRC sequencing software program is a "must have" for serious MC500 users. Some might be put off by the software's complexity, but that's really at the core of its advantages. Where the old MRC software allowed very good "first-aid" editing, Super-MRC allows editing with previously-unavailable precision. For those of you who use the Roland MC500 in any professional capacity, the Super-MRC program will turn your MC500 into a new animal. And for those of you who've never worked with one of Roland's hardware sequencers, the combination of MC500 MkII and Super-MRC software is an extremely tough one to beat. Now if Roland could just find an English typesetter with a dictionary . . . ■

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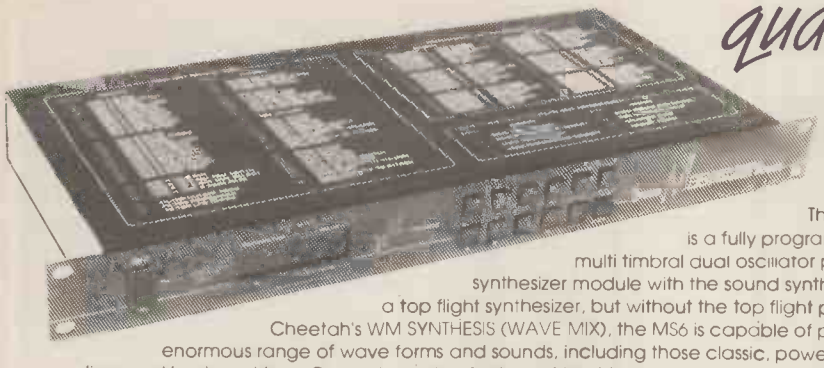

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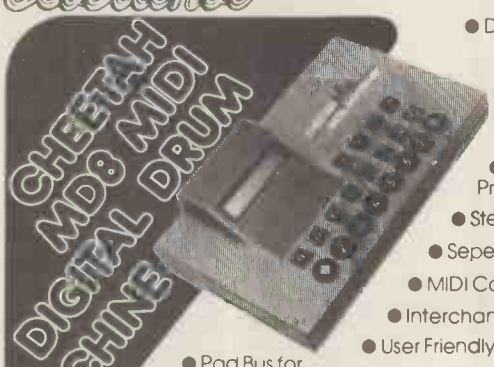

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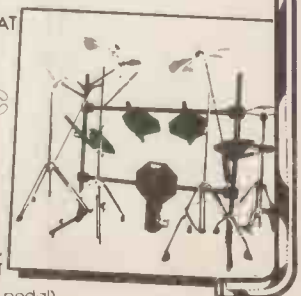

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SONGWRIGHT IV

Software for IBM PC and compatibles

If Christmas and rising mortgage repayments have left you short of cash as well as scorewriting software, this IBM PC program could level the score. Review by Ian Waugh.

WHAT ARE WE talking here? We are talking budget, that's what. SongWright is a rare beast, especially in PC circles – a scorewriting program which doesn't cost an arm and a leg.

To run SongWright you'll need an IBM PC or compatible (I ran it on an Amstrad 1640), 256K of RAM and a printer. A MIDI interface is optional but it could be useful. The standard Roland MPU401 is supported along with the Optronics interface. There is an "Other" option on the MIDI configuration page and this is configured as a "COM2 port at hex address 2F8 using interrupt IRQ-3" (I don't understand either) but you can modify these parameters by altering one of the files on disk.

Operation is strictly from the computer keyboard – the mouse is out. The first screen proffers the main menu which has eight options. We'll do the easy ones first.

Path and Files

THESE ALLOW YOU to set the path and drive for data files and list the current directory. SongWright files are displayed along with their titles – if you've given them one. This is very useful. Even during the review I accumulated nearly two dozen test and half-finished files.

Record

LET'S PUT SOME music in. In Record mode you enter note pitches first then tap out the rhythm in real time to the beep of a metronome. You can play the computer keyboard (ugh!) or enter notes from a MIDI keyboard.

You can wipe a recording but you can't delete, say, the last note should you press the wrong key, but you can record a few bars, check them then record a few more.

When you've recorded some pitches you move on to a stave display. A metronome ticks away and you have to press a function key to enter the rhythm. The note durations are drawn as bars across the stave as you do so. You can erase your effort and try tapping again until you're happy with the results. Then the program turns the bars into notation. There's a quantise function here (called Precision) which helps enormously.

The metronome speed, however, bears no relation to tempo markings (which are usually in beats per minute). The default is 100, which is about 40bpm. It's far too slow for accurate tap timing - you try it. Speed it up and the beep becomes irregular. I found it very difficult to enter anything of any complexity although 'Frère Jacques' I managed – just.

You can enter the notes and durations in real (tap) time from a MIDI keyboard (this draws the bars directly onto the stave) but the irregular metronome is no help here.

Compose

FORTUNATELY THERE IS a second method of input which is far more flexible and versatile: the Compose screen is effectively a note editor. Here you can correct mistakes made in Record or enter notes directly onto the stave – in my opinion, a far more sensible idea.

Three clefs are supported – treble, bass and alto. The note range extends to four octaves over each clef beginning with low C, but notes will not print higher than four leger lines above the stave.

It's important to understand the layout of the staves. Unlike some scorewriters (C-Lab's Notator, for example – see review elsewhere in this issue), SongWright's staves are of fixed length. When you fill one stave you must move manually down to the next one.

If you need two or more staves (for a piano part or orchestral score) you can link adjacent staves together. You can insert staves at will (if you want to add an extra part, for example) but you could have problems if you suddenly decide to insert extra bars, as you can't push bars off one stave and onto the next. You can move and copy part sections, however, so all is not lost but it will pay to know exactly what you want to enter before you start to enter it.

Notes have four parameters: Name (pitch), Accidental, Value (duration) and Link. Link is used to tie one note to the next (and to slur them – an aspect of music not supported over MIDI) and to form chords. When you form chords you have to work from top to bottom and the program won't let you link two notes of the same pitch even if one has been accidentally lowered, for example, A and Ab.

The shortest note length available is a 16th and the shortest triplets are eighth-note triplets. This could be restricting, although 32nd notes are available from user-defined symbols.

You can set time and key signatures and change them within a stave although the program can't line up different time signatures on connected staves (à la *Tubular Bells*). This is a very difficult thing to implement and many more expensive programs can't do it either.

SongWright supports many music symbols, however, including 1st, 2nd and 3rd time endings, repeat and double bar lines, accents, tenuto and fermata signs. You can also define your own symbols using a text editor and several symbol definitions are supplied on the system disk.

The spacing or Width between notes can be adjusted and, indeed, may be necessary at times. For example, if you enter a bar of 16th notes the default Width value makes the notes overlap the bar lines. This isn't always obvious from the Composer screen and needs to be considered when constructing a score. Width adjustment has to be made manually.

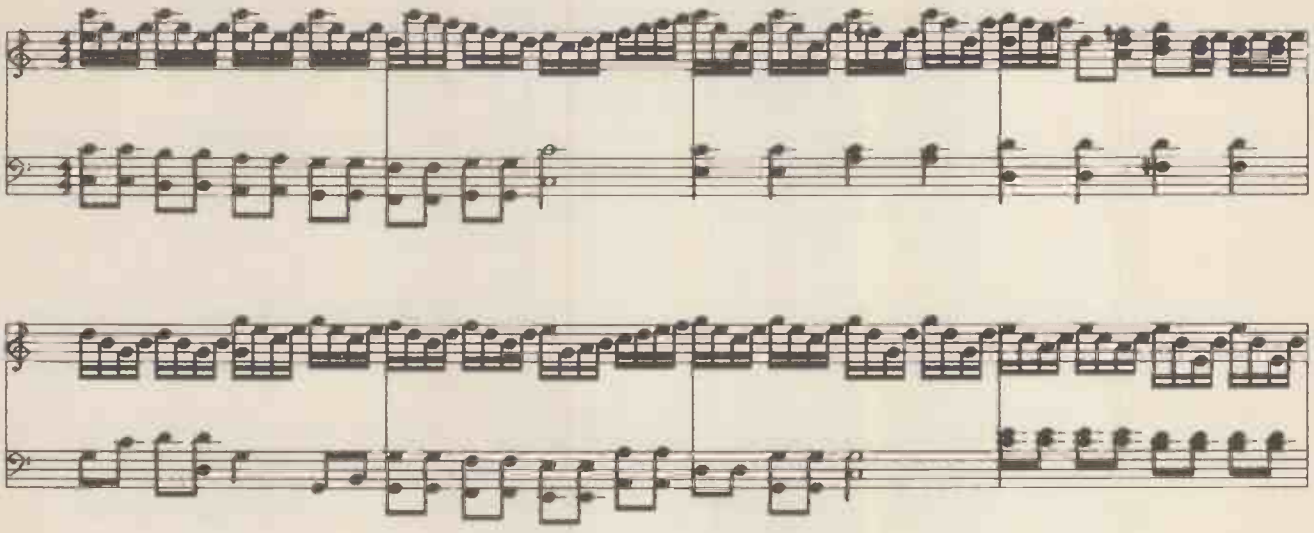
Each stave can hold two parts (each containing chords), well suited to Bach's *3-part Inventions* and their like, as long as they don't include durations the program can't handle. Many modern rock and pop song arrangements are written in three or four parts on a piano stave.

Apart from the music content you can enter a music header above the stave (which will probably consist of chord symbols) and sets of lyrics beneath them. A novel feature is Sing mode which prints out the lyrics as it plays the tune. Interesting.

Chord symbols will be adjusted if you transpose the piece but be prepared for some A sharps (you can alter them manually, of course, if you wish). You don't have full

by Handel

♩ = 140 *Allegro moderato*



Printed on an Epson FX80 using SongWright

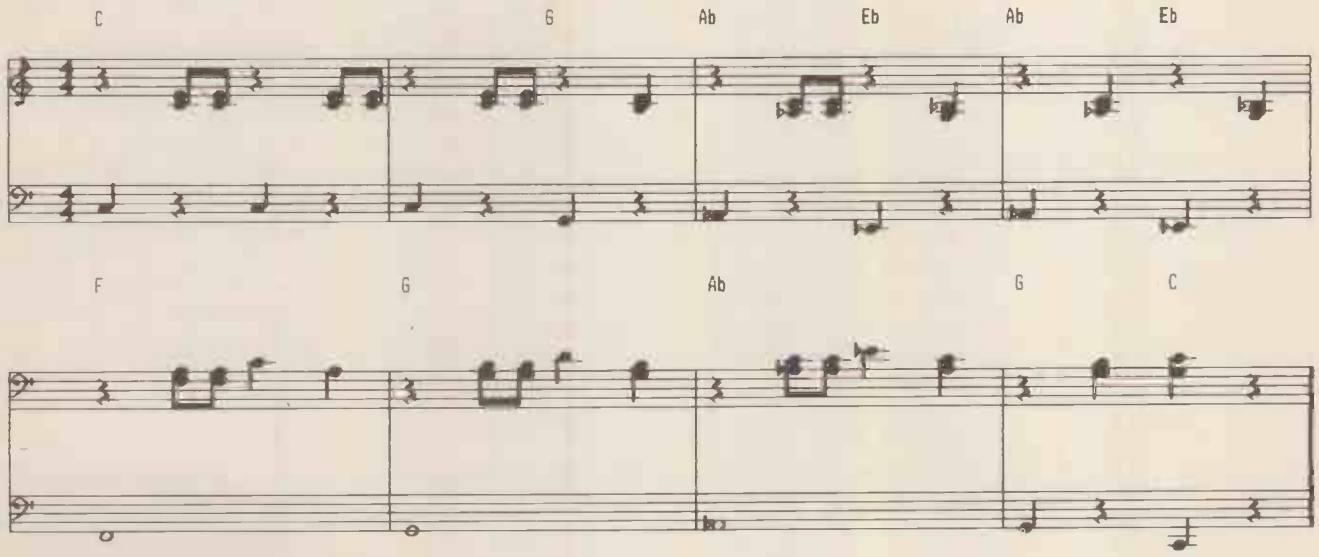
Queen of Sheba by Handel

Bare Back Riders

from The Circus Suit

by Ian Waugh

♩ = 120 *At a Canter*



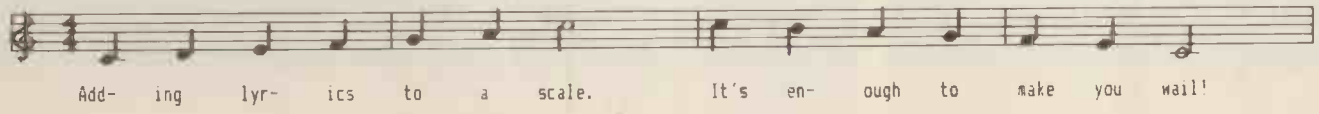
Bare Back Riders by Ian Waugh

Words & Music

Adding lyrics to a tune

by Ian Waugh

♩ = 120 *Sing it, baby!*



Adding words to music

► control over the accidentals either and can't alter them enharmonically.

The program remembers the attributes of the last note and offers them for the next one. Pitches can be entered from a MIDI keyboard, too, and then stepped through adding their Value and Link attributes. This helps make step-time input a little easier and quicker.

Compose has several helpful features. For example, it reminds you if you try to leave a line containing an incomplete bar. It also advises that Cb is not often used but it will permit it.

To sum up, Compose doesn't give you infinite flexibility but it is written to support probably around 75 to 80 percent of "average western music" (I generalise, I generalise).

Edit

ONTO THE EDIT screen. This displays a (slightly smaller) set of eight staves. You can cut, copy, paste and move bits of the arrangement around in bar increments – very useful for repetitive scores – and sections can be saved and then loaded into different scores, enabling you to build up a complete score from lots of individual parts (or vice versa).

The Edit module didn't take to my Yamaha PF70 piano, however, and crashed when I tried to leave it (parting is such sweet sorrow). After several conversations with the suppliers (and several experiments), we began to suspect it was the Active Sensing messages put out by the PF70 which were causing the problems.

However, equipment which doesn't recognise Active Sensing should ignore it (most do) and it's really no excuse for the program to crash.

Perform

YOU CAN HEAR individual lines played back though the PC's speaker from Compose. Chords are played as arpeggios, which, given the restrictions of the PC's sound chip, is fine. To hear the whole score you have to select Perform.

Playback via MIDI is a consummation devoutly to be wished but, unfortunately (aye, here's the rub), in its present incarnation SongWright is a scorewriter rather than a sequencer. Consequently MIDI playback is rather erratic. Give it busy parts to play at speed and it goes to pieces.

You can enter the speed before playing the piece but the program restricts you to values between 15 and 300 but, again, this does not represent a bpm tempo. The speed can be altered as it plays but it doesn't tell you what value of speed is current. If you speed it up you can get much faster than 300 and on return to the playback screen you may see a value of 700 or more. I've cranked it up to 1993 to play Handel's *Queen of Sheba*. Very odd, and hardly an ideal state of affairs. Accurate playback via MIDI would greatly increase SongWright's potential.

Print

SONGWRIGHT SUPPORTS IBM, Epson, Star and Proprinter printers and you can choose low, medium and high resolution printout. High resolution is pretty good – see sample printout.

Notes aren't beamed in the Composer but they can be joined together for printout, although you have no control over the grouping of the beamed notes. Some aspects of the layout could be improved but I think SongWright has a fair crack at a difficult job. Remember, we're talking budget here.

Read the manual from the beginning and you'll walk through a very good tutorial section. The reference section, however, only lists the options available from the various menus and really should be expanded.

Verdict

HAVING LOOKED AT some of the big boys in the scorewriting business – and some of the smaller ones – I find SongWright a difficult fellow to place. It hasn't got all the bells and whistles of the big boys, and I'm afraid certain sections of the music community won't be able to produce the scores their hearts desire, but it will cater for a great deal of popular music. If you simply want to write lead sheets (melody, chords and lyrics) it will do the job with nonchalant ease.

Let's not beat around the bush. SongWright's real strength is its price. My main disappointment is the poor playback via MIDI but, as this is a software consideration, perhaps the situation can be improved.

Having said that, playback still serves as a guide to what you've written and if you bear in mind the fact that even some of the more expensive scorewriters don't have a MIDI playback facility, I think that puts SongWright's place in the musical scheme of things firmly into perspective. It's by no means fully comprehensive but it does perform a good range of scorewriting functions quite well – and cost-effectively. ■

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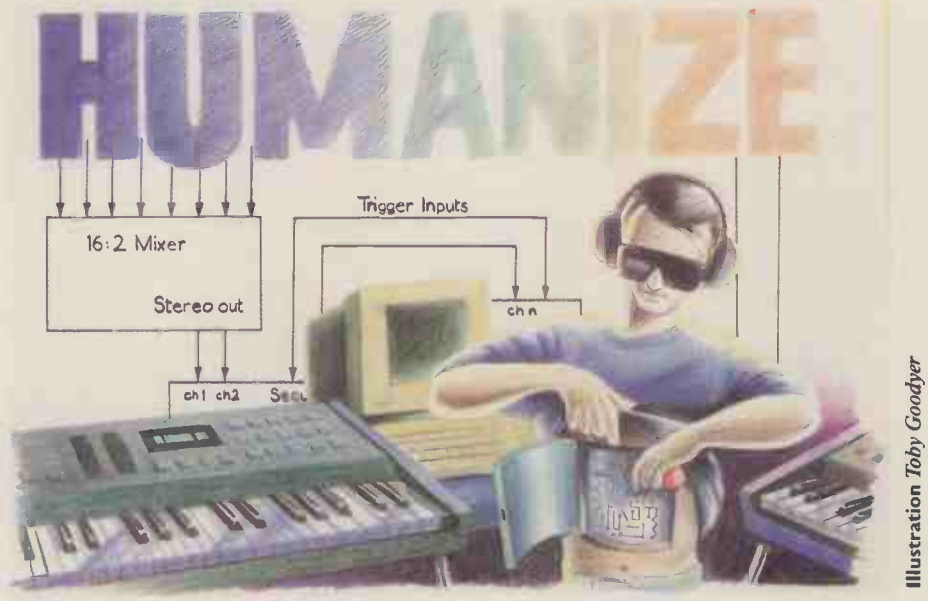

Illustration *Toby Goodyer*

A sequencer can make or break your music – but how do you give a sequence a "human" touch as opposed to a mechanical handicap? *Text by Travis Charbeneau.*

WHAT MAKES MUSIC sound "human" or "mechanical"? Where does unfeeling mechanical precision take over from desirable human accuracy? The "soul" in music is, in part at least, a product of the techniques we humans cobbled together in order to cope with the instruments we've invented down through the ages and our inability to cope with them as we would like. The trouble with electronic instruments is that they allow us to overcome many of these shortcomings and create sounds and music that are literally too perfect.

You can easily synthesise the sound of a flute, but simulating a human playing the flute is an entirely different matter. Similarly, unless your fingers are a yard long, it's impossible to simulate a guitar strum on a keyboard over the proper register of a guitar patch. The real-time control necessary for imitating wind instruments and guitars is missing from most synths and samplers, and this situation is partly responsible for the proliferation of new and expensive MIDI wind and guitar controllers. Be aware, also, that the breath controller which drives virtually all Yamaha DX-series synths will go a long way towards solving the problem of missing expression.

Ironically, the best way of "humanising" your electronic instruments, is with the aid of a computer. If you can't get your drum machine to stutter, flam or do a press roll because you can't play them or your model doesn't support those features, remember that the computer/sequencer combination liberates us from the constraints of keyboard technique and pre-determined features. Properly used, your sequencer can simulate the playing of instruments whose sounds were never meant to issue forth from a row of black-and-whites.

Currently, even using the best controller and sound-generating gear in the world, you are unlikely to achieve the nuance and clarity of a virtuoso performance unless you *are* a virtuoso. Even then, people are likely to gripe about trivia like the graininess in your sample. However, as anyone who has played in a "real" band knows, ensemble work can hide a multitude of sins. As a hardened sinner, I'll begin with the sequencer itself.

Tempo

TEMPO IS THE first "humanisable" aspect of music that the sequencer brings under complete control. Various real-time interfaces are available that will follow a human drummer in live performance, but let's take a look at tempo flexibility as it comes in many sequencers. How do you get a rhythm pattern to change with a "human" feel?

Assuming your sequencer supports a tempo track, globally or by individual track, you have all the tempo control any human group of players has. Better, in fact. Your drummer won't get excited and speed up, causing bitter recriminations about whose "job" it is to guide and keep time. And global tempo control is just fine. Unless you're into experimental music, the idea is to keep "the group" together. If your sequencer supports offsets for individual tracks, you can always simulate the bass player who needs sleep or the drummer who's anxious to get through a rehearsal before the pubs close.

After you've got your basic tracks laid down, say for a rock instrumental, open up the tempo window, listen to the piece and let your imagination in. Basic tempo: 120 beats per minute. But, it's a hot night at *Club I' Go Go*. The band starts at 120bpm, however, after the first eight bars, people are crowding onto the floor. On the eighth bar the drummer rolls into the second verse and, responding involuntarily to an adrenalin rush, the tempo goes up: bar 9: 122, bar 10: 123, bar 11: 125. But at 125 you smartly regain control and sizzle up to the chorus. Drummer does a nice, broken tom roll, and you immediately flip back to 120bpm. Then comes the guitar break: another abrupt jump up to 125bpm. As the guitarist burns to a climax, the tempo climbs just perceptibly up to 128. Third verse: 125. Then, something you could never get right at the real *Club I' Go Go*: a perfect ritard on the vamp: 123, 120, 117, 111, 106, to a perfect dead stop – right down to the reverb dying on the beat. Something that would have taken years to achieve playing in garages and clubs, tempo control perfectly in accord with musical content, can be accomplished by the thoughtful entry of a few digits.

The uses of tempo variations can be a lot more subtle or a lot more obvious. Try raising the tempo just a couple of bpm for each bar in a two-bar drum roll heading into the middle eight, then resuming the original tempo. The roll will build a head of steam "just like a real drummer". In the "obvious" department, picture a classical conductor threatening the orchestra with his baton as he pushes and pulls them 12 times in as many bars. Your variations may run over a very narrow range, maybe a change of one or two bpm from one bar to the next, but the effect can be surprisingly convincing.

For random variations in tempo, make a tempo track of some uneven length that has nothing to do with the structure of your song – say nine bars of narrow variation running 120bpm, 122bpm, 121bpm, 119bpm, 118bpm, 119bpm, 121bpm, 123bpm, 122bpm. Loop it and forget it. Barely perceptible, these slight

variations can help humanise a piece of music in a way deliberate changes of tempo will not.

Velocity

THESE SAME OBSERVATIONS apply to velocity and MIDI volume (MIDI controller 7) assigns. Even if your keyboard puts out velocity information you are unlikely to achieve a convincing performance for your sampled string section. This is what the computer was built for – play the part in at a straight velocity value of 64. Then go to the event editor and lower the velocity on individual notes. Suddenly you've got a "performance".

Many sequencers (my Voyetra Sequencer Plus III included) allow you to crescendo or decrescendo velocities. Phrases or passages can thus build to dominate others, or give way to others. The truth is, they can fade in or fade out a part more convincingly than most "real" players. Try combining a little crescendo with the tempo build-up in the two-bar drum roll we talked about earlier. A tired pattern taken right off your machine can be sculpted in this way to fit *your* expression, even if you've never hit a drum in your life.

If all your gear supports controller number 7, you can go a long way towards an automated mix. At the very least, you can achieve "human" dynamics which may exceed, but still resemble, those of human players. In most of my early bands we were so alternately preoccupied and then thrilled at playing all the notes right that dynamics were forgotten – properly used dynamics are often the trademark of a seasoned player. Changes in dynamics, even in heads-down, no-nonsense, mindless rock 'n' roll, are essential parts of human performance. Again, after all the tracks are down, go to the mixer and "audition" bars for forté and piano (loud and soft, to you). Then go back and insert number 7s or velocity assigns until you arrive at the right feel.

Quantisation

WHAT ABOUT THE precision with which a musician plays – what your sequencer calls quantisation? For years musicians have striven to be tight (in one sense or another). Now (musical) tightness is possible at the push of a button. Usual result: mechanical music. Quantisation is obviously useful as a repair tool, perhaps to put a bassline back in time with a bass drum, but it can also be a great creative tool, particularly if you cultivate a sensibility for human laziness. Say you've got a nice, loose groove leading up to an instrumental break, try quantising the break to match both the bass and the drums. In this case, the abrupt move into tight sync from your carefully-cultivated looseness will sound truly impressive, just like "real" musicians who've suddenly tightened up.

But quantisation is like any powerful new tool: you'll probably tend to over-use it at first and finding an appropriate place for it in your creative palette is worth spending time over.

More subtly, offsets – which slip tracks or parts of tracks forward or back in relation to the others – can also help humanise a performance. My Sequencer Plus has two offset functions, one which offsets in playback only, allowing you to audition various degrees of slippage, and a permanent offset that will take any part of the track and "physically" slip notes so that they're permanently re-positioned after you've decided on the desired result.

"Aggressive" and "laid-back" are not normally considered adjectives for use with machines. But these two attitudes can be simulated with uncanny effect by a computer. Of course the chances are, that no-one will consciously notice that anything is happening. In all music there are a great many subconscious ingredients and the effort spent studying them and implementing these with your sequencer will pay off when it comes to "humanising" the machine's performance.

Transposition

YOUR SEQUENCER MAY support various types of transposition. These can also be used to add variation and colour. Say you've got a single-line sax vamp, built on a repeating phrase – it can only repeat for a limited amount of time before it sounds unrealistic. Try adding a harmony ►

line to a few bars of the single-line phrase. Try straight fifths for starters and experiment from there.

You may have a sequencer that supports harmonic inversion as well as harmonic transposition. Try telling your key signature window that the song is in C Dorian instead of plain old C-minor and your vamped sax can suddenly switch modes for the fade-out. Alternatively, phrase inversion can turn a phrase inside-out around a selected note axis for some nice surprises. If the facility doesn't exist on the sequencer it may be worth the effort of working the inversion out and inputting it as a separate part – isn't that what real musicians do?

Human?

IS ALL THIS key-punching, this micro-surgery necessary for a few bars of music? Having served a 20-year apprenticeship in bands and writing music, I can confirm that this is no spontaneous kick-out-the-jams enterprise. It would be fair to say it's more closely related to the writing experience. In terms of artistic legitimacy, computer composition/performance is just as valid as writing music but is perhaps more akin to painting or making animated films. Both persuits lack spontaneity and do not yield immediate results – but they *do* yield results and are perfectly valid approches to what you might loosely call artistic creativity.

The MIDI/computer encounter is also very much like that of taking a band into a recording studio. The bottom line in both cases is the final mix. I challenge the general record-buying public to tell the difference between a record made by a well-produced group using "conventional" studio practices and a sufficiently resourceful one-man MIDI band working from his back room.

Next time you're drooling over the advertisements and reviews in these pages, look seriously at your current rig. Have you really exploited it to the full? Look what The Beatles did with two guitars, bass and drums. There's a lot to be said for knowing your instrument and this applies as much, if not more, to hi-tech gear as to "conventional" instruments. Adding more and more little black boxes to your arsenal of sound sources is going to make it correspondingly more difficult to "humanise" your music.

On the other hand, the capacity to better simulate human technique is being built into a lot of newer gear. Some of it, the new R8 "Human Rhythm Composer" from Roland, for instance, employs "artificial intelligence" to do this. Instead of real AI (which is not yet out of the lab) I'm guessing these machines use variations on the types of algorithms found in algorithmic compositional software, where you set parameters and the algorithm simulates a controlled randomness. (See feature on computer composition elsewhere in this issue.)

But improvements in sequencing is where the real action will be. The Alesis MMT8 dedicated sequencer already supports different types of quantisation to adjust note ons, note offs, note durations, changing the note ons without affecting durations and so on. In brief, more flexibility.

More significantly, and probably more cheaply, look for software upgrades for your present computer-based sequencer. The new Master Tracks Pro, for example (it wasn't the first, nor will it be the last), supports a more sophisticated approach to quantisation where you set a margin of error or a quantisation "window". Notes that fall off the click, but are within the margin of error, are left unquantised while any real howlers are re-positioned. This way, some of the original human inaccuracy in the performance is retained.

Part of the beauty of making music with MIDI and a computer is that the technology continually brings ever more sophisticated, creative tools. That said, I don't think we'll ever have a true "human" button – you'll still need to know how to apply a technique to an instrument, and how and where to apply it. But better "humanising" tools are almost certain to come along and will, no doubt, be made very welcome.

Humanising a garage band is no problem; it's true, there's nothing like a live jam involving live musicians and their abilities, limitations, moods and inspiration. Nobody is going to deny that, and long may it live. But the result of an inspired performance and a carefully engineered sequence is the same – an emotive piece of music on a piece of tape. Right now there are A&R men up and down the country turning down demo tapes they believe to be out of fashion because they're obviously made with the help of machines – the same A&R men who are signing bands using technology a little more subtly, claiming that music needs to be made by "live" musicians. What did an A&R man ever know?

The bottom line is that once the computer has done your bidding, it's your music. That old saying about computers, "garbage in, garbage out" easily and validly translates to "human in, human out". ■

THEME AND VARIATIONS

Frankfurt Musikmesse 1989

Each year the Frankfurt music fair provides a battlefield where time-warped "widdly-widdly" guitarists deny the existence of MIDI, and the musically educated deny the existence of guitarists. Report by Simon Trask.

NO SOONER THAN the dust had settled from the NAMM show in Anaheim, than the music equipment industry were busy setting up their stands in Germany. What had changed in the intervening five days (apart from the weather)? We were eager to find out.

New software to be found at Frankfurt included **Steinberg**'s upmarket Cubit sequencer which marks a new generation of Atari ST sequencers. Cubit employs another Steinberg innovation, M.ROS (MIDI Realtime Operating System), which its writers claim endows the ST with multitasking abilities. It boasts 1024 tracks, 384ppqn resolution, reads MIDI Time Code, is Pro24 and MIDI File compatible and makes impressive use of interactive graphic editing techniques. No UK price had been fixed at the time of the show.

Also making its debut on the Steinberg stand was a stereo sample processing program called Avalon. The program supports all samplers and includes resynthesis techniques. An optional D/A card offers AES/EBU interfacing to CD and DAT.

Intelligent Music have a particularly impressive and intriguing ST sequencer in the form of the 256-track Realtime, which provides a unique blend of familiar sequencing techniques and the sort of intelligent composition techniques for which the company are so famous.

A new British company called **The Digital Muse** chose Frankfurt to unveil a new Atari sequencer called Virtuoso (£TBA), which has been written entirely in machine code and is capable of multiple concurrent task-processing. Virtuoso has 99 tracks, a 480ppqn resolution, a tempo resolution of 0.01bpm, custom-designed graphics, open-ended modular design and the ability to load and save to disk as a background task.

On the hardware front, **Oberheim** introduced a new keyboard synth in the form of the 61-note OB8k (£1099), which is essentially an eight-voice multitimbral version of the Matrix 1000 expander with a built-in Systemizer providing controller-keyboard facilities. The company also introduced the third in their line of Perf/x Performance Effects: Navigator (£245), is a MIDI mapper which allows you to do things like reassign and filter controllers, build custom drum-kit maps, rescale velocity and controllers, map up to 32 notes to patches and synchronise patch changes on up to 16 MIDI channels.

E-mu provided perhaps the biggest surprise of the show with the introduction of their Proteus 16-bit multitimbral digital sound module, a 1U-high 19" rack-mounting unit along Roland U110 lines. Drawing on the Emulator III sound library, the Proteus offers 4Mb-worth of 16-bit samples (expandable internally to 8Mb), 192 presets, 32-voice polyphony, up to 16-part multitimbral operation, six polyphonic outputs (which can also be used as three stereo pairs) and two stereo effects loops. You can combine parts of one sound with another or with any selection of digital waveforms which are stored in Proteus' sample ROM. In keeping with the instrument's multitimbral nature, E-mu have included a broad range of sounds. The samples are impressive: clean, bright and with plenty of presence and sparkle.

Proteus features MidiPatch software, which gives you direct real-time access to over 40 of a sound's parameters, either from a MIDI keyboard, from other MIDI controllers, or from the instrument's internal LFOs and envelopes. At around £799 the Proteus is set to make a strong impact in the marketplace – but you'll have to wait until April/May time to get your hands on one.

The company also furthered the impact of their samplers by introducing the Emax SE with SCSI interface, which is expected to retail at under £2000.

Alesis were showing their 16-bit Quadraverb Simultaneous Digital Effects Processor (£449) which allows sounds to be processed through up to four effects drawn from pitch, delay and reverb types together with three-band parametric EQ.

The company have taken an interesting direction with their HR16B drum machine (£479), which is an HR16 with a new set of sounds and additional software for a combined HR16/HR16B system. The HR16B price includes an extra chip for the HR16 which Alesis' UK distributors' Sound Technology will fit free of charge.

Alesis also introduced the first two products to use their revolutionary Integrated Monolithic Surface circuit-board technology, the 1622 mixer (£799) and MEQ230 60-band ⅓ octave graphic EQ (£199), both available May/June. The compact size of the latter has to be seen to be believed. This could be the start of something big in miniaturisation (if you see what I mean).

Casio are consolidating their existing hi-tech range with the introduction of the FZ20M (£1899), essentially an FZ10M with SCSI port, the VZ8M (£499), a 1U-high 19" rack-mount version of the VZ10M with eight instead of 16 voices, the PG310 MIDI guitar (£999), and DH800 digital horn (£219), which adds a rhythm and chord accompaniment facility and recorder-type fingering to the basic DH100 spec.

Akai provided one of the more offbeat products of the show in the form of the U5 Trackman (£199), a Walkman-styled four-channel cassette recorder with one mic input and two instrument inputs which allows you to play back any tape recorded on a standard cassette deck while simultaneously recording two more channels. Built-in echo can be added on the vocal input, distortion and echo/chorus on the instrument input. Destined to go down a storm with the karaoke set, the U5 could also become a useful practice tool for musicians. Available as from March.

Akai also introduced the AR900 16-bit PCM digital reverb, which comes complete with a wireless remote control. The AR900 offers 20 preset reverb programs and the ability to create numerous variations by adjusting pre-delay time (0.01-210msecs) and reverb time (1-16 secs) settings on the front panel. The results can be stored in any of 79 user memories, making a total of 99 programs including the presets. The AR900 also has a dual seven-band programmable graphic EQ section, which can be used independently of or in conjunction with the digital reverb.

Frankfurt also saw the release of version 2.0 software for the S1000 and for the MPC60/ASQ10. The new S1000 software (free of charge to users) introduces time-stretch capability, which allows you to change the length of a sample without changing its pitch. There are two modes: Cyclic (best used on single notes) and Intelligent (best used on music and speech samples).

The new MPC60/ASQ10 software includes the 2nd Sequence function, which allows you to run two sequences concurrently, and the ability to record on all 16 MIDI channels simultaneously and to play back on up to 64 MIDI channels via the four MIDI Outs. There are quite a few other new features in the upgrade, making it a must-have for existing owners. The software comes on ROM, and the good news is that Akai will fit it free of charge.

Korg, meanwhile, are continuing to build up an extremely impressive hi-tech product range. Announced at Frankfurt were the S3 Production Workstation (£1150) and the T1 Total Workstation (£3700). The S3 is a neat addition to the company's S1 sampling drum machine and

Photography *Tim Goodyer*

Q1 MIDI sequencer (which, incidentally, *still* aren't available – what is occurring here, chaps?). It's a 16-bit drum machine (non-sampling) with an onboard eight-track MIDI sequencer, onboard digital multi-effects generator and SMPTE read/write capability. Drum sounds can be transmitted via four individual outs as well as the usual stereo outputs. Editing of the S3's drum sounds is posible courtesy of a multi-point digital amplitude envelope, and it's also possible to reverse the samples. Additional sounds (including stereo samples) can be added via two PCM ROM card slots, while a RAM card slot is available for storing patterns and sequences.

The T1, meanwhile, aspires to be a "total music workstation" (hence the "T" tag). Using the same AI synthesis system as the M1, the T1's internal sample ROM is twice the size of the M1's (four as opposed to two megawords), allowing for an even broader range of sounds as the basis of synthesis. The T1 uses the same 88-note weighted keyboard as Korg's SG1D electronic piano, and features an extensive set of MIDI Master Control Functions, 32 MIDI channels, eight-way splits and velocity layers, and independent velocity curves for internal and external voices. An onboard sequencer offers 65,000-note capacity, while a 3.5" 2HD disk drive is provided for storage. Programming is via a sizeable 256×64-dot LCD, and an optional RAM board allows new sample data to be loaded from disk for even more sonic possibilities.

Korg also introduced a first for them: the pitch-to-MIDI Z3 MIDI guitar system (£799+£179). The Z3 uses a new pitch extraction algorithm which Korg claim works out the pitch in half a cycle. The ZD3 hex pickup can be attached to any guitar, and connects to the Z3 1U-high 19" ►

► rack unit, which contains a four-op FM synth module with built-in reverb. An optional FC6 pedalboard allows you to select Z3 patches remotely.

The company's latest effects unit is the 16-bit A3 Performance Signal Processor (£950). In current fashion it's a multi-effect device, allowing you to combine up to six effects and store the combination in effect "chains" for instant recall. Forty-one effect types are provided, including reverb, delay, exciter, distortion, chorus and rotary speaker. The A3's range of effect types and effect chains can be expanded by plugging in ROM cards. Exciting stuff.

Oberheim OB8k – more than a Matrix 1000

Unfortunately, of the new gear only the A3, Z3 and the M1R (rack-mount version of the M1) were available for public inspection. The rest of the gear was tantalisingly on display in glass cases. The A3 and Z3 are scheduled for February/March availability, but you'll have to wait till June-ish for the rest of the new products.

Kawai are another company consolidating their existing range (in this case the K1 synth range) rather than introducing new developments. The K1 II (£745) is, as its name suggests, a mark two version of the K1, adding 16 onboard digital effects (reverb and echo) and a separate "drum kit" section with up to 32 dedicated PCM drum samples assignable across the keyboard (tuning, volume and pan are programmable per key). The 16 digital effects can be selected remotely via MIDI patch changes, which means that they can be sequenced along with any dedicated digital effect units you may have.

The "glass case" syndrome appeared again with the K4 synth, which is expected to retail for under £1000 and won't be available until much later in the year, so don't hold your breath. The 61-note K4 employs the same synthesis method as the K1 series, but takes it into the realm of 16-bit fidelity. Other "sixteens" on the K4 are 16-note polyphony and 16-part multitimbrality. The synth will have an onboard digital effects procesor, 128 sounds, and assignable drum sounds along the lines of the K1 II.

Roland were debuting the W30 Music Workstation (£1599) and the GR50/GK2 Guitar Synthesis system (£950+£125 – both the subject of a news item in MT, February '89), together with the D5 LA synth (£599), R5 drum machine (c. £399) and the sophisticiated A50 and A80 controller keyboards (£1395 and £1599 respectively). The D5 is essentially a D10 minus the rhythm track but plus a few performance features like chord play, chase play and arpeggio. The R5, meanwhile, is a scaled-down version of the R8, in both size and facilities (smaller LCD, no card slots and so on), but seems to preserve all the most important aspects of its bigger relative.

Tucked away in the backroom was Roland's stereo 16-bit digital sampler, a 3U-high rack-mount unit which is apparently based on a recently-completed sampling chip. The S770 will offer 24 voices with digital filtering; 48, 44.1 and 24K sampling rates; 2Mb of RAM as standard, expandable up to 16MB; a removable 40Mb hard disk; six polyphonic individual outputs in addition to the usual stereo pair; digital inputs and outputs; a large LCD and, following in the footsteps of the S50/550 and S330, a monitor output. It seems that the S770 will also have LA synthesis capabilities and will allow you to create your own sampled partials. But don't all go running down to your local music shop just yet. Quite apart from the fact that the S770 wasn't up and running at Frankfurt, Roland have yet to fix either a price or a release date.

Anyone bringing out a controller keyboard now will have to look to **Cheetah**, who augment their existing range with the Series 7P (£699.95), their most impressive controller yet. Employing an 88-note velocity-sensitive weighted keyboard, the 7P has eight zones (with up to four notes/channels layered per key), four MIDI outputs, a choice of 26 attack velocity and 26 release velocity curves, 80 performance memories, three continuous wheels and footpedal sockets, 2 footswitch sockets, MIDI input with merge, and remote MIDI start/stop and clock facility. Phew!

The company were also debuting the eight-track MQ8 MIDI Sequencer/Performance system. The MQ8 has an 8000-event capacity, 16 songs, 256 patterns, and allows you to choose from eight effects including vector chord, echo, embellish and arpeggio. The memory is battery backed, which is probably a good thing as, like Alesis' MMT8 sequencer, the MQ8 uses tape storage of sequences. As always with Cheetah, the emphasis is on affordable pricing; at £249.95 the MQ8 is definitely the affordable face of sequencing.

Yamaha (hey, we've spelt their name right this year) had plenty of new gear to show, though nothing which demonstrated a move beyond FM. Clearly they feel there's still plenty of mileage to be had from the packaging, and perhaps they're right. Leader of the pack is the V50 (£1200), which essentially comprises two DX11 synths, an eight-track sequencer, 61 PCM drum samples, a digital multi-effects unit and a disk drive – all in all a very capable workstation-type instrument, if you go for that type of thing.

The DS55 keyboard (£499) is a YS100/200 type of instrument, but more into the "home keyboard" territory, with an Auto Performance function which provides 43 rhythm and accompaniment patterns and three variations in a range of styles from blues to disco.

The company's newest drum machine, the 16-bit RX8 (£350), won't exactly set the world alight, but looks to be a very competent affair, with 43 PCM sampled drum and percussion voices, 100 patterns and 20 songs, and two assignable outs in addition to the usual stereo pair.

The TQ5 expander (£450) is another variation on the four-op FM theme, this time combining 100 preset and 100 programmable FM sounds with ten digital effects and an eight-track sequencer which can store 10,000 notes and eight songs. Colour buffs will be interested to know that the TQ5 forgoes Yamaha's usual black finish for a less sober silver-grey.

WX7 owners can now buy a four-op FM expander which is dedicated to their needs: the WT11 (around £400). In fact it's similar to the TX81Z in organisation, but is more compact, easier to use and comes with 96 preset performance sounds.

The 88-note PF1500 electronic piano (£1600) has five AWM sounds (two acoustic pianos, one electric, harpsichord and vibes) together with three digital reverb effects, and 2×20W speakers built in. With their Clavinova range, Yamaha aren't short on electronic pianos, but the 1500 sounds particularly impressive, apparently employing a special process which further cleans up the sounds.

It could have been another computer dodo for Yamaha, but all the signs are that the company's CI/20 IBM-compatible portable computer is set to make a big impact at the pro end of the sequencing market – and at £2999 that's the *only* end of the market for it. The CI comes bundled with a powerful 400-track sequencer from Yamaha themselves, though prospective owners needn't worry about lack of choice – the number of US MIDI software companies who have rallied round the CI is impressive.

Yamaha have obviously been listening to the comments of their DMP7 users, because they've developed a nifty new programming unit for the DMP7/11. Apparently UK-originated, the RTCI (£600) attempts to bring some knobs-n-sliders friendliness to programming the DMP7/DMP11, which seems like a pretty admirable objective to me. Basically it makes the controls for a single channel available in a more familiar mixing-desk layout; you just select the channel you want (1-32 ie. four units) and slide and twiddle to your heart's content.

Yamaha continue to impress on the audio front. Along with a new six-input portastudio, the MT3X (£549), they've developed two powerful new digital multi-effects units, the SPX1000 (£629) and SPX900 (£999), each of which allows up to five effects to be used at the same time. The company have also added to their 100 series of compact personal recording equipment (which currently consists of the MT100 portastudio and RI00 digital reverb) with the Q100 stereo graphic equaliser (£109), GSP100 Guitar Processor (£129), MV100 mic/line mixer (£129), A100 50W per channel power amplifier (£179) and S100 speakers. Definitely worth checking if you're setting up a home studio on a tight budget.

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The Song Remains the Same

While the debates about the future of traditional songwriting continue in raised voices, Frazier Chorus continue the tradition with the quiet dignity of classical composers. Interview by Louise Swann and Steve Hillier.

ALTHOUGH YOU'D DIE trying to convince the crowd that assembles every year at Castle Donnington, there's more to music than volume, anger and machismo. Similarly, there are more options open to the popular musician than rock 'n' roll honesty or hi-tech gimmickry. In fact, there's more than enough room in popular music for Frazier Chorus – a Brighton outfit mixing technology and tradition with the more sensitive side of songwriting.

Tim Freeman, the founder member of the band, acknowledges the inspiration behind Frazier Chorus to be Manchester guitar classicists Durutti Column. Intrigued by the amazing array of instruments on which they had performed at a concert on the Chorus' homeground of Brighton –trumpets, violins and clarinets together with state of the art synthesisers and drum machines – Freeman teamed up with flautist Kate Holmes. He had long been writing songs, and together they decided to forget the usual guitar, bass and drums format and attempt to bring acoustic and electronic instruments together.

This marked the end of a long period of self-imposed isolation for Freeman and it is from his experiences of "staying indoors all the time and getting away with as little as possible" that he attempted to compose precise documentaries of domestic life. With titles such as 'Sitting Room' and 'Dream Kitchen', it was these songs that enticed clarinetist Chris Taplin to join the band. Having completed a course on deconstructed music at Brighton Polytechnic and being obsessed with computers, Taplin became "the active straight man" behind Freeman's songs. Percussionist Michele Allardyce (another Brighton local) joined soon after.

Having begun their career playing local gigs as most bands do, Frazier Chorus were quick to record a demo of what Freeman regards as their finest song, 'Sloppy Heart'. Without a definite name for the band, they originally promoted the song under the guise of Plop!. It was greeted, perhaps not surprisingly, with general apathy from almost every record label they had contacted. Determined to try again, they chose the name Frazier Chorus. Freeman picks up the story:

"This time we decided to send the demo only

to companies we thought would be interested in our music and approach, rather than every company in the *Music Week Directory*. We contacted mainly the leading independent companies like Factory, Cocteau and Cherry Red. The responses we received were generally encouraging but some were less than helpful. I had the owner of a certain company shouting down the phone at me to stop bothering him. A couple of others didn't even reply.

"In the end it was 4AD records at Camden Town in London (who have Cocteau Twins and M/A/R/R/S on their roster of artists) who showed the most enthusiasm and we signed a deal. It was understood between us and Ivo (4AD's mentor) that we would record one EP as a stepping stone towards a major deal rather than both parties commit themselves to a long-term contract.

"We recorded three songs, 'Sloppy Heart', 'Typical' and 'Storm' in the autumn with producer Gil Norton. Although we were happy with the record at the time, it was recorded extremely quickly and we think it shows in some of the arrangements. You tend to see this sort of thing only when you distance yourself from a project. We mixed it in a little studio in the middle of an estate in the heart of Liverpool. The area was so rough that we had to go to the corner shop in twos and park the car right next to the studio so we could watch it constantly. It was quite an experience."

The 'Sloppy Heart' EP came out in the winter of 1987 to critical acclaim, but surprised many regular 4AD listeners with its commerciality. It seemed that Frazier Chorus were the odd one out on a label which was well known for releasing "indie" music. Taplin comments:

"4AD have a glowing reputation for quality music, and having a record released on their label seems to give us almost instant credibility in some circles, but we had always known that we were only with them temporarily. They were signing up a lot of aggressive guitar bands like AR Kane and the Pixies, and we felt that our music was slightly more mainstream than typical 4AD material. Almost as soon as 'Sloppy Heart' came out, we received a phone call from Virgin records wanting us to sign with them."

So in early 1988, Frazier Chorus signed to Virgin records. The move was not without its worries, though: "We were concerned initially", continues Taplin, "that in signing to a major label like Virgin we would be pressurised into compromising ourselves - that we'd have to suit their idea of our music so that they could market us more easily. However, we have been proved wrong. Virgin have virtually given us a free hand to experiment and have been sympathetic to our requirements. They respect our art."

'Dream Kitchen', the band's first single on Virgin, was released in January this year. Although not a huge seller, the band were content to get into the Top 75 with their first major release. The accompanying video also received a wealth of exposure for the band. Freeman explains:

"It seemed as though the media saw 'Dream Kitchen' as a kind of wacky pop song. In actual fact it is quite a sombre tale of a mother whose children have left her. It was a shame that it was viewed simply as pop and the content of the song ignored.

Taken from their forthcoming album *Sue*, 'Dream Kitchen' was a marked progression from the 4AD days. With half-whispered vocals and a luscious string arrangement to the fore, it was a great refinement of the music they had recorded only a year previously. With much of *Sue* following the mood set by the single, how did the band go about creating the material used on the album?

Taplin: "Tim usually starts the ball rolling by coming up with some words, and from there we all take part in the construction of the song. I do most of the sequencer and drum machine programming which begins as a very basic arrangement to suit the atmosphere set by Tim. We follow the process from the simplest idea right through to the final arrangement together as a group."

Freeman is very clear to point out that he writes from his own experiences:

"I've often found bands that sing about going off to war or 'saving the world with rock and roll' unconvincing. My songs are concerned with the more mundane aspects of life. Some people may find it strange hearing a song about carpet burns or coffee, but these are things that touch everybody's lives. I mean, most people have a carpet! Although my songs are a reflection of everyday life, I try to keep them open to interpretation - each listener can bring their own experiences to bear on the lyrics and derive their own meaning.

"It wasn't that the string players were making mistakes - we needed an almost mechanically precise phrase which they weren't able to supply."

"It seems strange to admit, but the lyricists I admire are in groups such as Abba and The Carpenters. They sing about things that we can all relate to. 'Goodbye to Love' by The Carpenters is a good example of a situation portryed in a song that has touched us all."

The casual observer might think that to convey these lyrics effectively using insensitive synthesisers and computers would be an impossible task. However, both Taplin and Freeman are vociferous in their appreciation of machines and feel that the group have melded real instruments and modern technology particularly well. There is definitely a very "human" feel to their music. Was this a conscious decision?

"In our music we're combining electronic and acoustic instruments", says Freeman, "not as a policy decision, but because that is what the mood of the songs required. At last, in recording this album, we were in a position where we could being in brass and string sections to play the lines which previously we'd relied on synthesisers to play. It was refreshing to record 'live' instruments. Up until now we've had to settle for synthesiser approximations of the instruments, but these 'real' sounds bring the songs to life.

"Nevertheless, it hasn't all been plain sailing. On the new version of 'Storm', we had to replace the real strings with sampled strings because the players couldn't keep time. It wasn't so much that they were making mistakes in their timing, but we needed an almost mechanically precise rhythmical phrase which they weren't able to supply. This could be where machines have an advantage over humans. We were still able to get ▶

► the effect we wanted by triggering the samples from the sequencer. But even the best samples of violins or cellos still sound like samples, quite dead when compared to the real thing.

"It's so easy to let the technology dominate your sound. A lot of records we hear today just sound like equipment rather than musicians. I think the best music comes from the interaction of human beings with fellow musicians rather than machines."

In order to record music though, there is a certain amount of music technology that every band has to acommodate. Even acoustic bands usually have to employ electronic reverb or simple compression techniques to produce a record that is acceptable to a modern audience. As *Sue* is full of samplers and sequencers, what are the factors that influence Frazier Chorus' choice of equipment? Taplin takes the question:

"I think my main considerations when buying an instrument are the efficiency of the machine, in terms of its ease of use, and whether it has its own character. The Roland Super Jupiter module that we use is a good example of both. Although it was superseded years ago by D50s or even the Yamaha FM synths it is still a great instrument with a sound all of its own. It's far easier to understand the analogue subtractive synthesis that it uses than most digital synthesis techniques. We've used it extensively on the album for a variety of things. It's particularly good for bass sounds and I love the depth of sound the Jupiter gives which is sadly lacking in a lot of digital synths.

"Your music becomes real when it is performed – whether you have a lavish light show or whether you're playing a piano in the corner of a pub."

"We bought an Emax sampler a while ago. We thought it would help us both in the studio and live with its hard disk capabilities. Unfortunately we're now realising that it's quite similar to the early Fairlights in that it imparts its own character to everything it samples. Although there is nothing intrinsically wrong with that, its actual sound is too rock-orientated for our use. We're probably going to upgrade to an Akai S1000 before long. We're using an S900 at the moment which is very good, but the S1000 is a phenomenal improvement on its predecessor. Sampling in stereo is something I'd like to get into soon.

"For sequencing we've recently acquired the Hybrid Arts SMPTE-Track sequencing package for our Atari ST computer. Until then we'd been using a Roland MC500 which was OK but limited in only having four tracks. Also the speed with which you can get an idea from your head into SMPTE-Track makes a lot of sense for us."

Playing live has always been an important aspect of Frazier Chorus' music. Earlier this year they played a few "warm up" gigs in and around London to enthusiastic audiences and rave reviews. A national tour (possibly supporting Black) is scheduled for the summer as well, which will take the band throughout Britain. Having recently finished a breakneck tour of Northern local radio stations, Frazier Chorus perform wherever their music can take them. So how do Frazier Chorus perform their music live, not having a drummer or guitarist?

"We use backing tapes on stage", explains Freeman. "There seems still to be a great taboo about this which I don't think is fair. It's far more convenient for us to use a four-track tape recorder for drums and bass than to have to bring in a drummer who is another personality to contend with and has another opinion on how the music should sound. To take our whole sequencer setup onto stage would prove a headache as well. We prefer to concentrate on the actual playing."

But is there a need for a band such as Frazier Chorus, with the promotional might of a major record company behind them, to actually get up onto a stage where they are vulnerable? Without a flamboyant image or outspoken front person wouldn't it be easier for them to leave the performing with the image makers at Virgin? Freeman strongly objects to the suggestion.

"It's not adequate to just be a bedroom musician. Your music becomes real when it is performed – whether you have a lavish light show, fireworks and a male voice choir or whether you're playing a piano in the corner of a pub.

"We would hope that when people come to se us they just wanted to hear some pleasant songs. I suppose we are quite reserved on stage, but we can only be what we are. We have had problems with PA systems and engineers who want to amplify everything to such an extent that you lose the dynamics of the music in a swamp of sheer volume. We would prefer to play at a level at which the audience can hear us clearly. The ear can only take so much."

Although Freeman sees his long-term career as that of a songwriter rather than that of a vocalist, already his inimitable vocal style has won him favour in the music press and has resulted in a further collaboration at 4AD records; this time with This Mortal Coil.

"This Mortal Coil is an umbrella under which Ivo brings together his favourite musicians, and quite often this includes artists other than those signed to 4AD itself. In the past he's had Howard Devoto and Richenal as well as members of The Cocteau Twins performing very old songs by Alex Sadkin, Colin Newman and even Talking Heads. I was asked to contribute some vocals to an old Byrds song that will be on the new This Mortal Coil LP.

"It's strange to think that I had often dreamt of appearing on a TMC album. I was so thrilled to be asked, but when I actually came to do the vocals, the whole thing was over very quickly – I couldn't have been in the studio more than two hours – but it is an ambition fulfilled."

Taplin, however, having recently been doing some programming work with Martin Young of Colourbox and M/A/R/R/S fame, intends to continue working with the technological side of music making, possibly expanding into production in the near future. With the debut album reaching the shops by the end of March, and a national tour in the summer, Frazier Chorus look set to have a busy year. So within a barrage of media acclaim, the last word must be Freeman's:

"We are trying to entertain the largest audience in the best way we know. You won't find any layers of guitar feedback or industrial noises on *Sue*, but flutes, violins and clarinets. I just hope that people buy the album expecting to hear some real songs." ■

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BRIDGING THE GAP BETWEEN ART AND TECHNOLOGY

OBERHEIM CYCLONE

MIDI Performance Effect

Photography *Adam Jones*

Oberheim have produced some much-loved synthesisers in their time, but can a MIDI Performance Effect ever have the same enduring appeal as an OBX? Review by Simon Trask.

FOR MANY MUSICIANS the name Oberheim is synonymous with classy, indeed classic, analogue polysynths like the OBX, OB8 and the Matrix 12. What musician in their right mind hasn't lusted after that uniquely rich and warm Oberheim sound at some time or other? In this resolutely digital age, the continued popularity of the company's ever-expanding Matrix synth range is testimony to the staying power of their particular brand of analogue synthesis coupled with digital control.

It may seem surprising, then, that Oberheim are now producing a series of small, unassuming grey boxes which make not a sound between them. Collectively known as Perf/x MIDI Performance Effects, Cyclone, Systemizer and Navigator operate solely within the realm of MIDI data. The Systemizer Master MIDI Control Station aims to turn even the humblest of MIDI keyboards into a sophisticated MIDI controller, while Navigator (just introduced at Frankfurt) is a MIDI mapper along the lines of the Axxess MIDI Mapper and the Transform section of Creator/Notator. But it is Cyclone which makes the boldest move into the area of composition.

Background

OBERHEIM WAS FOUNDED back in 1970 with the intention of providing instruments for performing musicians, and, as the label suggests, these Performance Effects are a continuation of that philosophy. Oberheim have previously explored aspects of both Cyclone and Systemizer in their instruments. The company implemented a chord hold feature (one of Cyclone's many options) as long ago as their OBX synth, while the OB8 included a well-appointed arpeggiator and, more recently, the company's Xk controller keyboard (reviewed E&MM, May '86) included both arpeggiator and chord-hold facilities.

The arpeggio (the notes of a chord played successively rather than simultaneously) has been used in music since the 17th century, beginning life as a form of chordal embellishment at a time when music was shifting from modal polyphony to tonal harmony, and subsequently becoming a more integral part of the melodic content and the texture of Classical and Romantic music. On a more mundane level, arpeggios now rank alongside scales as an established test of manual dexterity in instrument grade exams.

In contrast, the introduction of the electronic arpeggiator took arpeggios out of the physical and into the electronic realm. All you have to do is hold down the required notes on the keyboard and the arpeggiator cycles round them for you at a pre-determined tempo. Typically these notes are played in order of pitch (up, down, up and down or at random), but some arpeggiators can arpeggiate the notes in the order in which they are played. Couple this with the fact that *any* selection of notes can be

arpeggiated and it's clear that the arpeggiator takes you beyond the traditional concept of arpeggios into a form of "performance sequencing" – an interesting example of how what starts out as an electronic emulation of a "natural" process can take on a life of its own.

Access to the Cyclone

OPERATING CYCLONE IS carried out from nine low-profile buttons on the front panel. Eight of these do double duty in Play and Edit modes, while the ninth acts as Play/Edit mode selector. In Play mode, you have buttons controlling Clone on/off, Cycle on/off, Manual Control and Record/Hold. A Clone (hence Cyclone) consists of the notes you've recorded and/or are playing "live" from the keyboard; the term refers to the fact that Cyclone makes a copy of these notes which it can then process according to all the parameter values you've set. In many cases this involves real-time processing of incoming notes – no mean feat.

For cost reasons, Oberheim have provided Cyclone with a meagre two-character LED window. Consequently, you have to get used to abbreviated names for each parameter, which is a real pain when you're learning to use the Performance Effect. What's more, this limitation has led Oberheim to employ a rather odd and confusing convention for displaying tempo values.

The matrix-style parameter access which Oberheim have employed on the Perf/x series is a definite success, helped by the fact that Cyclone remembers which parameter you last selected for each of the 15 edit function groups in the matrix display. Once you've thoroughly familiarised yourself with the layout of Cyclone's parameters, you can edit its Programs quite rapidly. However, for that extra edge of speed it would have been helpful to have Cyclone remember which function you last selected in each column.

Creating the Cyclone

CYCLONE HAS 16 preset Programs and 16 user Programs (the latter amount expandable to 84 with a memory upgrade). Oberheim have logically developed the arpeggio/sequence connection by allowing you to record and store a separate sequence for each of its user Programs (each with a maximum of 32 events within up to 64 beats). The sequence is stored in a Record Buffer (logically enough) which can be switched off or assigned to transmit on any one of MIDI channels 1-16.

In addition, two keyboard zones and an additional Control zone are available per Program. Each keyboard zone can be assigned an independent range on the keyboard and, like the Record Buffer, can be turned off or assigned to transmit on any one MIDI channel. By turning off a keyboard zone and switching Cyclone's MIDI Thru function on, any notes played within that zone will be echoed "straight"; in this way you can, for instance, play a solo in zone two while arpeggiating a sequence of notes in zone one and having the Record Buffer repeatedly play a bassline.

Like the other two zones, the Control zone can cover any area of the entire MIDI note-range (in fact it can overlap the other zones). The Control zone has an associated programmable Base note from which notes in Live Trigger mode will be played back at original pitch. Repeated playing of the Base note will step through the Record Buffer sequence at its original pitch, while playing other notes in the zone will transpose the sequence.

You can also trigger Record Buffer sequences in Gated and Continuous modes from the Control zone, with real-time transposition of the sequence according to the notes played; only one transposition at a time is possible from the keyboard, but by using Auto Double you can create parallel transpositions. There doesn't, however, appear to be any way of getting the pitch sequence to retrigger each time a key is played.

There are three methods of recording sequences into Cyclone: Recorded Rhythm, Pulse and Live Trigger. The first is familiar real-time sequence recording. Pressing the Clone and Record/Hold buttons places Cyclone in a record-ready state; you can now trigger recording either by starting to play on your keyboard or by pressing Record/Hold again. Your playing can be quantised on recording to any resolution from crotchets to 96ths (triplet 32nd notes, or MIDI clock resoution) including triplet values. Drum machine-style recording is possible with Add recording enabled and an appropriate End Beat specified.

"Don't limit yourself to keyboards, either, try hooking up a drum machine to Cyclone's MIDI Out – the results can be very interesting."

Live Trigger recording is actually good old step-time. You can record a single note or a chord per step, advancing to the next step by pressing a silent note within the Control zone. The quantise value determines the step value; to program longer notes, you hold the relevant notes and press a Control-zone note the requisite number of times (so four times a 16th note equals a crotchet). The catch with Live Trigger recording is that you can't use rests. Once you've recorded a sequence in this way, however, you can add notes as for Recorded Rhythm by selecting Add.

Pulse recording is distinct from the other two methods in that notes are "added in" consecutively no matter when you play them, with the sequence of notes and rests cycling at the current pulse rate (which can be any value from a crotchet to a 96th note). Rests are selected by pressing a silent note in the Control zone. In this way you can create a rhythmic Pulse sequence (whereas a pulsed version of a Recorded Rhythm or Live Trigger sequence specifically removes all rests).

Using Pulse recording you can generate additive rhythms à la Philip Glass by dropping in a note or rest on each pass through the sequence. Once you've recorded a Pulse sequence you can adjust its playback rate by setting a different pulse timing, while Add mode allows you to carry on adding notes to the sequence consecutively. A special case of Pulse recording is tuplet quantisation: here all the notes you play will be fitted into one beat, each being given an equal duration within the beat (thus six notes would be a sextuplet).

"You plug a MIDI cable in one end and another out the other end – in between there's so much going on it makes your brain hurt trying to figure it out."

A further method of recording is available in both Recorded Rhythm and Pulse modes. By setting the recording method to Replace Gated you can get Cyclone to temporarily store and play back the notes you play on the keyboard; as long as one note is held down, any sequence of notes can be "grouped". As soon as you play a new group of notes, they replace the previous group.

With Pulse mode set, the notes are played according to the programmed pulsing rate. In Recorded Rhythm mode, the notes are played according to how long you hold them down for; play them in a rhythm and they'll be played back to you in that rhythm (continuously looping if Cycle is set to on). In Pulse mode, rests are entered by recording a ►

► silent Control-zone note in the correct consecutive position. If you take a shine to one particular sequence, stop recording and it will be stored in the Record buffer. You can Add notes to it in Recorded-Rhythm and Pulse modes if you wish.

Another sequence record feature is Chord Hold. If you select Record/Hold only, you can play any series of notes (up to 32 notes) and they will sustain until you turn off the facility. You now have a chord which you can trigger off the keyboard at any transposition and in any "live" rhythm using Live Single or Live Poly rhythm triggering from the keyboard Control zone. Incidentally, all these recording

methods preserve the input note velocity, but no performance controls (pitch-bend, aftertouch, modulation and so on) are recorded.

Arpeggiation is only possible with Clone switched on. In Recorded Rhythm mode, any notes you hold down on your keyboard will be arpeggiated in the rhythm of the Record Buffer sequence (if there is one) at the current tempo. The Record Buffer needn't be on, which means that you can play arpeggios with or without an accompanying sequence.

In Pulse mode, the notes will be arpeggiated at the current pulse rate (which is itself referenced to the current tempo). By playing notes in both zones you can create two independent arpeggios, which need not have the same number of notes although they cannot pulse at different rates. However, these arpeggios can be set to pulse in or out of phase.

Tuplet quantisation is a special case of pulse arpeggios: the playback rate of notes is determined by how many notes are in the arpeggio. It works like this: the notes you play will be fitted into the duration of a crotchet, so the more notes you play the faster they will have to be played by Cyclone. Try holding odd numbers of notes in each arpeggio for some irrational timing values.

There are two crucial parameter settings which determine how the notes you hold down on the keyboard will be played: Order and Mode. There are nine possible ways for Cyclone to order the notes it receives: forward, backward, forward-backward and backward-forward all preserve the received note collection, while up, down, up-down and down-up process the notes in MIDI note-number order. Finally, random order means just that; randomness is increased by repeats of the same note being allowed.

The Mode parameter, however, is a bit more unusual: it determines *how many* notes should be played at each Recorded Rhythm or Pulse position. Here the number of notes can be based on recorded note-groupings, set to a fixed number (1-8), specified as proportional to the total number of source notes divided by a number from 1-8, or chosen at random from a range between one to a specified number (1-8).

These parameters affect Record Buffer sequences and notes from the keyboard zones alike. So if you want a sequence to be played as recorded, any accompanying real-time arpeggios you trigger from the keyboard will have to be "as played" also. Incidentally, by selecting Live Single or Live Poly keyboard triggering you can step through a recorded note sequence with each successive keypress within the Control zone. For instance, you could record a series of eight-note chords, set playback Mode to eight notes at a time, and trigger the chords from successive keypresses. In the meantime you could be holding a five-note chord in keyboard zone two which Cyclone is arpeggiating through a five-stage transposition. Well, you get the general idea, no doubt.

Cyclone has several Auto functions, which are effects automatically generated by the unit when programmed. Auto Xpose allows you to create a series of up to eight transpositions of a sequence for each Program. Each transposition (known as a Stage) can be played up to 128 times, and you can set up a "recursion interval" for all Stages which allows you to add a fixed transposition amount for each repeat. For instance, if you specify a semitone up (relative to C3) then each repeat will be played a semitone higher than the previous one. Auto Xpose works for all sequences, regardless of how they were recorded.

With a sequence length of one beat (the minimum length) you can create a note sequence of up to eight notes through the transpositions you select. Alternatively, you could create a bassline sequence by, say, recording a one-bar bassline and transposing it eight times, repeating each transposition eight times.

Auto Double provides a means of adding in up to eight extra notes for each played note. You can define the pitch of each extra note relative to C3 (middle C), allowing you to build a chord around the played note(s). What's more, each of the extra notes can be assigned its own MIDI channel 1-16, thus expanding the sonic possibilities of your chord. At its simplest you can use Auto Double to create an octave effect, but the flexibility is such that a broad range of possibilities are placed at your disposal. As you've probably gathered by now, that's what Cyclone's all about.

Auto Mutate provides further ways of twisting the notes you put into Cyclone, allowing you to "warp" note-on velocity, tempo and pulse-duration in a spontaneous manner using channel aftertouch, pitch-bend or any MIDI controller (0-97). Some experimentation is needed to get the most useful results out of this feature, but it's an interesting addition to Cyclone's features.

Behind the Cyclone

ON THE REAR panel of Cyclone are MIDI In and Out sockets together with four 1/4" jack sockets which Oberheim refer to as "pedals" but which are in fact footswitch inputs. Usefully, Cyclone detects footswitch polarity on power-up, meaning you can use whatever pedals you have lying around.

In addition to these four physical inputs (referred to as local pedals), you can define up to four incoming MIDI controller numbers (00-95) to act as controllers. In this way you can use any assignable footswitches and front-panel switches on your main MIDI keyboard to control selected Cyclone features. Local and external pedals three and four can be programmed for each of Cyclone's user Programs, while local and external pedals one and two are applied to all Programs.

One of the key features in Cyclone's flexibility is the fact that you can edit any of its parameters while a Program sequence is playing and/or Cyclone is arpeggiating the ►

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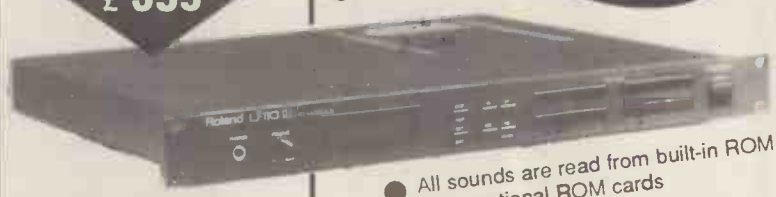

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notes that you're holding down on your master keyboard. Now, if your fingers are "tied up" on the keyboard, editing can prove a little tricky. Using Cyclone's pedal functions you can let your feet, not your fingers, do the walking by programming local and external pedals to select not only any parameter but also the required value of that parameter. These effects can be one-shot, latched or held. Also, you can program pedals to select a parameter and,

"One of the key features in Cyclone's flexibility is the fact that you can edit any of its parameters while a Program sequence is playing."

with successive presses, increment or decrement its value. Alternatively, you can set a pedal to simply call up a parameter, allowing you to adjust its value when you please.

Obviously even with up to eight pedals you'll have to be selective, but nonetheless "pedal control" allows real spontaneity in performance. For instance, you can switch the auto-doubling and auto-transpose effects in/out, switch to a different note-order or playback mode, or switch a zone in/out (in the latter case, allowing you to, say, switch from arpeggiating notes in zone two to playing a Cyclone-free solo in the same zone). And using two pedals to increment and decrement a parameter value, you could for instance change the duration of notes in Pulse Play mode, change the number of notes in Auto-Double mode, or change the number of beats in a recorded sequence.

Another pedal function allows you to control tempo by tapping a footswitch (tempo is averaged over three taps), while for recording purposes you can assign local pedal one to transmit an audio metronome click on every quarter-note. Also, by assigning Chain to a global footswitch you can step through Cyclone's Programs in Chain order. Each Program is assigned a Chain number which indicates the Program you want to step to - not the most flexible arrangement.

Syncing the Cyclone

CYCLONE ACKNOWLEDGES THE outside MIDI world through being able to generate and receive MIDI clocks and Start/Stop data. Alternatively, Cyclone can be set to respond to a non-MIDI sync signal (24, 48 or 96ppqn clock) via its pedal two input. This signal must be a positive pulse greater than one volt and longer than 100uSecs; Oberheim warn that the input is not recommended for audio signal inputs.

When Cyclone is set to read an external clock signal, its sequences and arpeggio-rate are referenced to the

"You can play a solo in zone two while arpeggiating a sequence of notes in zone one and having the Record Buffer repeatedly play a bassline."

incoming tempo. If Cyclone is generating MIDI clock, the tempo of an external MIDI sequencer or drum machine will be referenced to Cyclone's internal tempo. Straightforward enough, and it works extremely well - except for one problem. When MIDI clock send is enabled, Cyclone transmits a MIDI Start command every time a new Program is selected on the unit (whether from the Cyclone itself or via MIDI). The consequences are fairly obvious: each time you select a new Program, the slaved sequencer is sent flying back to bar one. If you want to record Cyclone's output into a sequencer (so that you can effectively use more than one Progam at the same time) you'll need to use a sequencer which allows you to record multitrack patterns which can then be chained into songs. This means the length of each pattern will have to coincide with the duration of the Cyclone Program, and concurrent Programs will have to change at the same time. Unfortunate, unfortunate.

Finally, you can transfer all your Program data via SysEx, which means that it's easy to make back-up copies and extend the standard 16-Program capacity.

Verdict

OBERHEIM BEGAN LIFE with two effects of a different, analogue kind: a ring modulator and a phase shifter. In those days, effects were produced using relatively straightforward electronic circuitry, and were applied to actual sounds. You plugged one audio cable in one end and another out the other end, and in between came at most a few knobs for you to twiddle. The results were predictable and readily understandable.

Today, less than 20 years later, Oberheim's two digital MIDI effects are software-based and are applied to logical representations of notes rather than to the actual sounds themselves. You plug one MIDI cable in one end and another out the other end, and in between there's so much going on that it makes your brain hurt just trying to figure it all out. Is this progress?

My own attitude towards Cyclone is ambivalent. On one hand I found getting to grips with it a very time-consuming and frustrating process, yet paradoxically there's something very endearing about it -particularly when it allows you to do stupid things like pulse 96th-notes at extreme tempos (particularly effective in conjunction with Replace Gated recording), or play back a Hold chord at the same time as you're recording it. If you can imagine Sun Ra on acid, you might have some idea of what you can achieve by going where MIDI was never meant to, er, lead. Don't limit yourself to keyboards, either; try hooking up a drum machine to Cyclone's MIDI Out - the results can be very interesting. In other words, if you want to be manic with your MIDI, Cyclone will travel along with you.

Perhaps the most impressive aspect of Cyclone is the way it allows you to edit every possible parameter while it's chucking out MIDI data faster than a speeding bullet. And if you should ever have problems with stuck notes (something I never encountered) there's a kill-all Hold-to-mute button which sends out note offs for every possible note on every channel.

However, although you can push Cyclone to extremes in terms of its real-time processing with no problem whatsoever, it did very occasionally crash as a result of certain "real-time" edits made during performance (such as changing zone limits or switching out the Cycle facility - not things you'll necessarily want to do often). None of these crashes happened with any consistency, which perhaps doesn't bode well for live use.

Cyclone will handle everything from straightforward arpeggios to "systems" rhythms to New Age-ish synth loops to dislocated dance rhythms to out-and-out free improvisation. Perhaps its one weakness is its inability to handle different rhythms (as opposed to different pitch sequences) concurrently - you'll need to use it in conjunction with a sequencer if you want to do such things.

Cyclone is an intriguing device but not particularly intuitive to use, and I wonder how many people will be prepared to spend the necessary amount of time becoming familiar with it. On the other hand, if you're prepared to put in the time, Cyclone might just end up becoming a friend for life. ■

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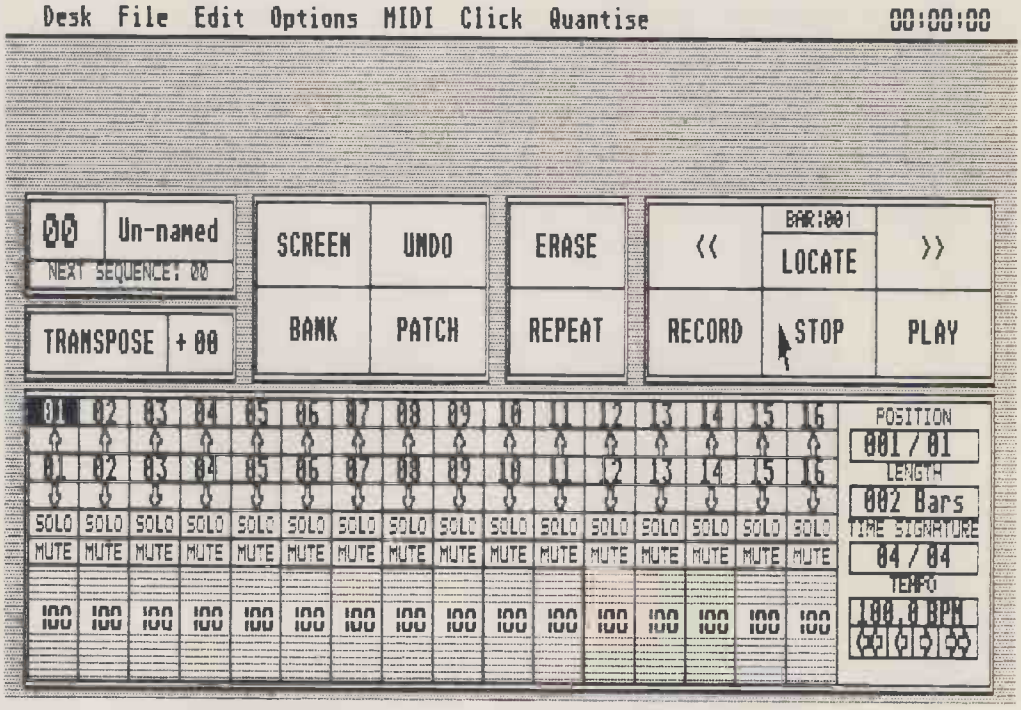


Main screen

If choosing sequencing software for your Atari ST is losing you sleep, this concise and cost-effective program could restore your faith in your computer. Review by Ian Waugh.

"WHY TRACKMAN?" ASKS the manual, and a jolly good question it is too. The Atari ST is blessed with more than its fair share of sequencer programs so what has Trackman – yet another sequencer – got to offer?

The manual answers itself in best rhetoric style. "When you use Trackman", it says, "you will have Time. Time for Music."

Sounds inviting, eh? Let's open the rather large Trackman box and see what's inside. First impressions are: rather more than you find in your average sequencer package. There's an auxiliary MIDI socket, a footswitch attached to about six feet of cable, a System disk, two manuals and the inevitable dongle.

Of the two manuals, one is a tutorial manual, designed to get you up and running and the other is a reference manual which explains the menu options.

The most striking thing about the manuals is their size – or rather lack of it. The tutorial has 44 pages and the reference manual has a mere 31. They are both glossy publications and the reference manual has a thumb index down the side so you can flip instantly to any section. Quality stuff.

The auxiliary MIDI socket plugs into the Modem port. Tracks can be routed here from the Main screen giving you access to 32 MIDI channels. The footswitch plugs into the joystick port and can be used to control a variety of Trackman's operations.

The Right Track

LET'S GET DOWN to business and see what Trackman is about. A good place to start is to look at its *modus operandi*. It can store 100 sequences of 32 tracks each. Sequences are organised in bars and may be up to 999 bars long.

The Main screen looks deceptively simple. At the top are several large boxes which are easy to click on and underneath are the tracks. These appear in two banks of 16 and you switch between them by clicking on the Bank button. A track is selected as current by clicking on it.

Each track has assigned to it a basic MIDI channel upon loading. Tracks 1-16 are set to channels 1-16 respectively. Tracks 17-32 are set to channels 1-16, too, but routed to the auxiliary MIDI Out. All these can be changed with a click of the mouse.

There's more to this than meets the eye because when you switch the MIDI Echo function on, incoming data is routed out on the currently-selected track's MIDI channel. This means that once your instruments have been assigned to their MIDI channels you can play any one of them from your master keyboard by clicking on the relevant track (and thus channel number). It's an incredibly simple and intuitive method of working although each track can record information on all 16 MIDI channels if you wish.

Below the track numbers and MIDI channel numbers are Solo and Mute buttons. The intriguing thing here is that both can be operative at the same time although Mute takes precedence over Solo. You can Solo more than one track and although that may seem to be a bit of a contradiction in terms, it's easier to Solo the four tracks you want to hear than it is to Mute the other 28.

Below these are faders which control MIDI velocity. This is, simply, brilliant. If you have a multitimbral instrument you've probably noticed that some sounds are louder than others. That means you have to readjust their relative volumes, probably on the expander itself, as you add new parts and introduce new sounds. Using the faders you can control everything from the computer and mix a piece "on the fly". As the faders control MIDI velocity, they could also affect timbre or other attributes of the sound, too, depending upon the patch.

Getting it Taped

AND SO TO recording. Operation is tape-recorder based with Record, Stop, Play and Fast Forward and Rewind buttons. If the sequence is long it can take a while to scroll through the piece (about 12 seconds for 100 bars) but the Locate function will take you to any bar instantly.

Because of the number of tracks and sequences and the way they are arranged, you can use Trackman like a 32-track tape recorder and record a song in a linear fashion – that is, in one piece from start to end. But you could just as easily record a number of individual patterns in separate sequences and chain them together, drum machine fashion. Flexible, what!

To move from one sequence to another you simply enter the two-digit sequence number on the numeric keypad. Sequences can be named, too, which is very useful.

The first step is to set the sequence length, although this can be altered later. A dialogue box offers you two bars in 4/4 time but this is easily changed. Time signatures between 2/2 and 32/16 are valid and it protects you from the ignominy of numerators with a value of one and greater than 32 (although it lures you into a false sense of security by allowing you to enter them in the dialogue box) by upping or lowering them to the nearest permissible value.

Next, click on the track you want to record on. Remember this will echo MIDI input to the MIDI channel – and instrument – the track is set to. Next click on Record and the metronome will tick away and recording will start. Alternatively, you can press the footswitch.

Loops and Repeats

THE TRACK LOOPS automatically. Once Record has been activated you can use the footswitch or the space bar to punch in and out. Punch in doesn't overwrite the track but overdubs on top of what has already been recorded. You can practice a part, therefore, by playing along with a track and then hit the footswitch to punch in without losing your stride. Hit the switch to punch out, practice another part then punch in again. It's an ideal way of building up drum patterns.

If the Repeat button is pressed during Record it automatically repeats any notes you hold down – again, useful for drum patterns. If activated at any other time it lets you enter a Note Duration in ticks, a Velocity Decay value and a Pressure Sensitivity value. Instant echoes, anyone?

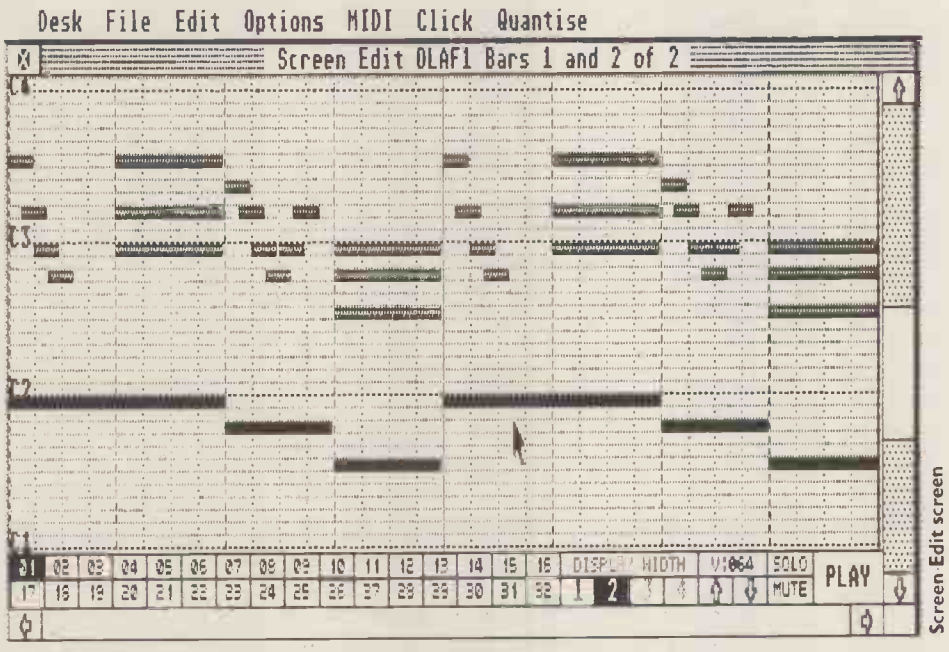
The repeat rate is determined by the current quantise value which is set in the pull-down Quantise menu. This works on incoming data and can help pull your playing into line, although you can switch it off and quantise the notes after recording.

If you hit a bum note what do you do? There are two options. Undo will undo everything from the time you pressed Record until you pressed Stop. It basically gives you another try at a take.

The other option is Erase. If this is activated while Record is on, it removes the notes you play. It observes the MIDI filters, too, enabling the selective erasure of controllers, patch changes, aftertouch and pitch-bend. If you select Erase at any other time, up pops a dialogue box which allows you to erase complete bars.

If a track is playing, clicking on Transpose lets you temporarily transpose it by pressing a note on your master keyboard. The transposition is cancelled when you stop playback.

A permanent transposition is made by selecting Transpose when the sequence is not playing. You can also select a range of tracks which will not be affected by Transpose – watch your drum tracks.



Screen Edit screen

Screen Edit

THERE'S ONLY ONE other screen in Trackman – the Screen Edit screen. Enter it by clicking on the large Screen button.

It's a grid editor, a format which has proved very popular over the years, especially with musicians who aren't quite at home with traditional music notation – it's also considerably easier to write a grid editor than a stave editor.

The grid editor controls are summed up in half a page in the reference manual although the tutorial does give it more space. It's very easy to use and it's a simple matter to move, copy, delete, insert and alter the duration and pitch of the notes. From one to four bars can be shown on screen at once and you can loop the section as you edit it.

Those are Trackman's basic recording features and together they form a powerful yet easy-to-use method of real-time recording. Now let's have a quick look at the pull-down menus. ►

On the Menu

THE FILE OPTIONS are used for saving and loading sequences. You can handle them all together or one at a time. The tempo, channel and fader settings are saved along with the notes.

You can also send and receive MIDI data which is stored on disk. The routine can handle virtually all MIDI data and although I didn't try dumping a sample, it's a simple matter to save patch data (but it can't initiate a MIDI dump request).

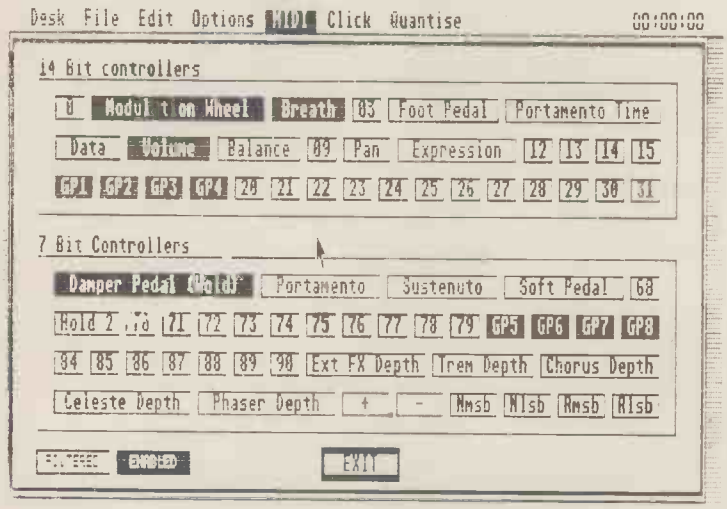
The Edit menu houses Copy, Erase and Delete bar functions. Within the Copy function you can insert, append and replace bars and you can copy from one sequence to another.

The ranges in all the editing functions are set with dialogue boxes and now's as good a time as any to mention the default values which appear when you select an edit option. Trackman offers the values for the "most likely" use of that function. For example, Copy offers to copy from the first bar to the last bar of the current sequence to the end of that sequence. The defaults are easy to edit if you have something else in mind.

Bounce Tracks lets you merge or overwrite tracks even between different sequences. Extract Notes will move a range of notes on a range of MIDI channels from one track to another. This can be used to erase unwanted notes or to alter the velocity, say, of a particular drum on a multi-part drum track. Rotate Sequence moves a sequence back or forward in time.

Work Loop is useful. It copies one or more bars of a sequence to another sequence (the default is sequence 99) for a bout of potentially destructive editing. If you like what you've done you can copy it back, if you don't you can return to the original sequence.

Make Song is where you chain together a list of sequences – assuming you've decided to work that way. This doesn't actually create a new Song track as such, but a Song list. This can be copied to another sequence which, in turn, can be treated just like any other sequence.



In the Options menu we find Loop to Bar which lets you set the bar number the sequence loops back to. It doesn't have to be bar one – you can loop back to the start of the last chorus, for example. Here you'll also find Velocity as well as Pitch Transposition – useful if you need to even out the velocities of some tracks.

Index lets you scroll through a list of all the sequences and tells you how many bars they contain. It also tells you how much memory is free. A 1040 should be able to record at least 80,000 notes, probably more if you don't go overboard with controller data.

Sync Output can be set from 1/4 to 1/64th clock pulses or sync 24, which is suitable for some older drum machines. This is routed to the auxiliary output.

Patch Memory maintains a separate list of patch change numbers for each sequence. This is transmitted when you select Stop.

The Footswitch option assigns functions to footswitches. Although one footswitch is supplied with the system, it can support three more if you plump for the expansion unit (coming up). The functions are: Play/Stop, Record, Locate, Erase, Repeat, Mouse (same as pressing the left button) and Tap Tempo (this lets you set the tempo by double tapping on the footswitch). The Space Bar can be similarly assigned.

You can see how much control a few footswitches can give you. A considerable amount of recording could be done without even touching the computer.

MIDI

THE MIDI MENU lets you toggle on and off the reception of Pitch-bend, Patch Change, Aftertouch and Song Select messages. Clicking on Controller Filters brings up a selection screen to enable controller filtering. Standard controllers such as Modulation and Volume are named which is helpful.

All Notes Off lets you choose which messages (Omni Off and so on) will be sent to each channel when playback stops. If you've been using an instrument which normally receives on all channels – Omni On – and it suddenly doesn't, the reason why probably lies here.

You can set Trackman to internal or external clock. But more than that, it can select the clock automatically: if started from the computer then internal is selected; if an external clock or a Continue message is received it reverts to external clock control. Clever.

You can save the settings of the items on the MIDI menu along with transpose exempt tracks, footswitch assignments and the sync output rate. These are automatically loaded when Trackman is booted.

Click selects the metronome speed, turns it off and offers a two-bar count in. The Quantise menu sets the record quantisation value from 1/4 to 1/64th note. You can set a Shuffle value here, too, from 17 to 84 percent.

Finally, a clock in the top right-hand corner of the screen shows the duration of the last play session. Why don't all sequencers have one?

Extras

THE EXPANSION UNIT mentioned earlier is available from Hinton Instruments (remember the Hinton MIDI interface?). It contains four programmable footswitch inputs, extra sync outputs and two auxiliary MIDI Outs plus a MIDI In with two Thrus. It is priced at £89.99.

Also on the Trackman disk is a Roland D50 Patch Librarian. This is a Public Domain program and only runs in hi-res. There are also 1000 DX voices courtesy of the Yamaha X-Series Owners Club.

Niggle time. The manuals contain most of the information you need but I do think the tutorial could have been arranged better. I reckon a tutorial should take you through the procedure of recording a complete Song step-by-step. Trackman's tutorial explains the screens and menus rather than taking you through a recording session, although several demo files are used to illustrate various options. There is also a three-page Quick Start Guide at the back. However, it's a credit to the program's design that lengthy instructions are not really necessary.

Most of Trackman's controls have keyboard equivalents ▶

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► although I believe if you have a mouse you should be able to use it for everything bar, perhaps, textual input. Some mouse-activated options require the use of the computer keyboard, too. I would particularly like to have been able to make numeric entries with the mouse. For example, Patch Changes, Transpositions, Auto Locate settings and so on. But I confess I was won over by the ability to change sequences by tapping on the keypad.

Although Trackman's editing features (Copy, Delete and Erase bars, for example) are easy to use and understand, a graphic approach (such as that adopted by Passport's MasterTracks) would have been even better.

The main screen doesn't show which tracks have been recorded on, nor does it show which are actually transmitting data during playback. A MIDI data reception indicator would be useful, too, to let you know that something is arriving at the MIDI In socket.

Although you can enter notes in the Screen Edit grid it's far from an ideal method of step-time input (try using it to enter a Bach Invention). And you can't get down to event level (although I'm sure most of us would prefer not to anyway).

Verdict

THE ACCOMPANYING BLURB says two years of research and development went into the creation of Trackman. Research was even done to work out the correct size and position of on-screen buttons – the user-interface as it's called. And a damn fine job seems to have been done, too. You can't fail but get the impression that Trackman is a rebellion against sequencer packages with 100-page plus manuals and 1001 esoteric MIDI functions.

Taken individually, Trackman's features aren't unique but they haven't been put together in quite this way before. Make a list of the sequencers which give you access to 32 MIDI channels (without requiring expensive additional hardware), which have fader mixing, looping, auto overdubbing, erase and undo functions, and the choice of linear and pattern-based song construction.

OK, so you can't program ritardandos and accelerandos (although immediate tempo changes are possible) or scale velocity in a similar way (to produce crescendos) and there isn't a Time Reverse mode but the question you need to ask is, "How much exotica do I need?"

Trackman is certainly one of the most flexible, friendly and easy-to-use real-time sequencers to appear on the market. My own personal disappointment is the lack of better step-time facilities but that won't bother many musicians.

The price includes free software updates, and since its launch Trackman has already undergone several (admittedly minor) modifications. The next major alteration to be implemented is a track naming facility.

A Trackman demonstration disk *plus* the Tutorial Manual *plus* the 1000 DX patches *plus* the D50 Patch Librarian is available for the staggeringly unbelievably-small sum of £10. The Save facility has been removed from the demo and it gives you 30 minutes of playing time and 15 minutes recording time before it times out, but the clock only ticks away while you're working. Considerate.

If real-time sequencing is your forté and you want a sequencer which is musician-friendly rather than one which was written to pander to the programmer's fancies, you really must check it out – it'll only cost you a tenner. There's life in the ST sequencer market yet. ■

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The new Point of View

Cubit

Desktop Midi-Recording System

Steinberg

Cubit

MIDI RECORDING SOFTWARE

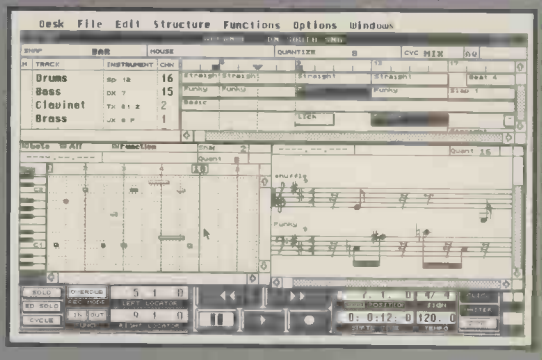
The main functions and controls are identical in all windows. You can, for example, switch to any part of the program while you are in record or playback mode. The windows provide various graphic displays for editing and arranging recorded MIDI-data.

Arrange Window

The Arrange Window is CUBIT's main working window. Record and edit up to 64 independent tracks.

As many as 29 tracks and 145 bars can be displayed in the window at the same time. In total you have 16 arrange windows each with 64 tracks at your disposal. Each recording, called a "part", is displayed graphically in the Arrange Window, and may be given its own name. The window can display each part's name or by using Event Display-mode can show all MIDI information on all tracks. In this mode, the Arrange Window resembles a tranparent tape while a cursor shows the current song position.

Parts can be cut, moved or copied with a simple click of the mouse. There is no need to understand complicated copy functions or type in long strings of numbers. CUBIT makes it easy to arrange even the most complex compositions.



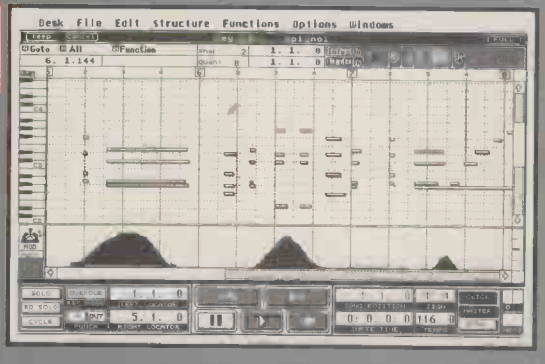
Four different edit windows are available in CUBIT: Key Edit, Drum Edit, Score Edit and Grid Edit. These four editors offer precise, yet simple, graphic handling of your music with tools such as eraser, pencil, paint brush, etc.. All edit-commands can be reversed with the UNDO function. Realtime and step mode recording are functional in all edit windows. Just as in the Arrange Window, a cursor moves across the screen to show the current song position.

Today's music production requires a MIDI-Recording-System that provides powerful specifications, but is fast and easy to use. Most sequencers do not fulfill these requirements. They are either too slow or too complex to facilitate creative inspiration.

Steinberg's answer is "CUBIT".

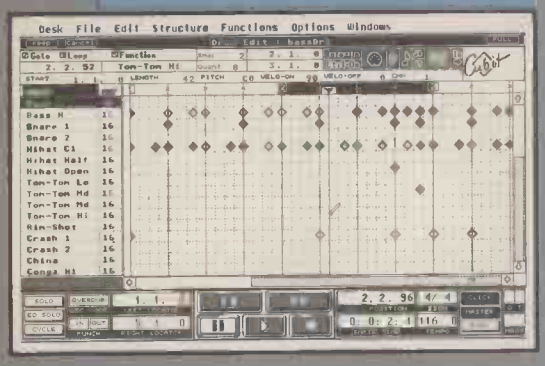
Visual-Song-Processing (VISP) and the Steinberg MIDI-Realtime-Operating-System (M.ROS) are the basis for a new generation of MIDI-Recording software. Visual-Song-Processing uses a self-explanatory user interface in which the graphics and the MIDI-playback are fully synchronized. M.ROS is a multi-tasking operation system that changes your computer into a true MIDI-worksystem.

CUBIT uses a flexible window management environment for the program. Whereas most programs utilize defined pages, CUBIT allows you to display several windows of the program simultaneously. Similar to windows in GEM, these windows may be called up, moved around or changed by the user, and you can "zoom-in" on any part. This allows you to customize your own working environment.



Key Edit

The Key Editor displays recorded notes in relation to a piano keyboard; seven and one half octaves can be displayed simultaneously. Various parts from different tracks may be displayed and edited. Curves for controller data (e.g. Pitch Bend) are displayed in the same window and may be edited graphically.

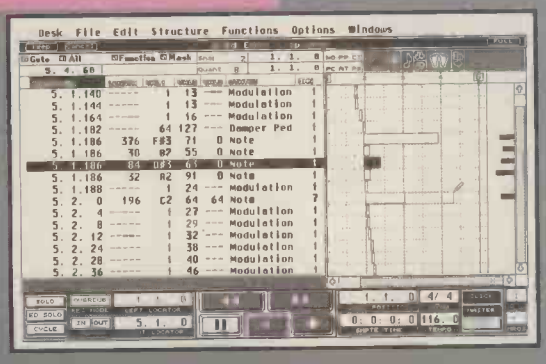


Drum Edit

Here you can define 64 different drum and percussion instruments with different MIDI channels and MIDI note assignments. There is individual quantizing for each instrument, and 4 accent levels may be pre-defined.

Score Edit

MIDI data from 16 different tracks can be displayed in standard music notation. The pitch and position of each note can be changed on the screen while the sequencer is running. Notes can be entered with the mouse by step-input or via a MIDI keyboard. Intelligent quantize-recognition optimizes the graphic display.



Grid Edit

Microscopic edition of all MIDI data (notes, velocity, controllers, etc.) is possible via numeric and graphic display. Different types of MIDI events may be selected using the mask-function.

CUBIT and M.ROS

CUBIT runs under Steinberg's MIDI REALTIME OPERATING SYSTEM (M.ROS). M.ROS insures the ultimate precision while entering or playing back MIDI data, even if very large amounts of data are involved. The internal clock resolution is 384 ppq (pulses per quater-note).

For the first time, M.ROS makes true multi-tasking possible, allowing you to run different MIDI applications simultaneously on one computer. M.ROS handles the communications and the synchronization. With a Mega ST it is possible to run a mixing-automation program (e.g. MIMIX), sound-editing software (e.g. SYNTHWORKS M-1), and a MIDI-Recording-System (CUBIT) ALL AT ONCE! CUBIT becomes the heart of your MIDI worksystem.

CUBIT Software Specifications

16 x 64 Tracks: 16 arrange windows each with 64 independent tracks.

M.ROS Implementation: Internal clock resolution 384 ppq (pulses per quater-note), full multi-tasking & network facilities.

Iterative Quantize: Quantizes in steps, leaving timing characteristics untouched.

Groove Quantize: Graphic editing of groove parameters.

Match Quantize: Copies the timing characteristics of a previously recorded track to another track.

Smooth Cycle: Ensures no gaps while looping.

Event Chasing: Sends the correct program change, controller and even Note-on at any song position.

Chord Recognition: Displays the name of the chord played on the MIDI keyboard.

Four-Player Mode: Up to four players can simultaneously record from different master keyboards or MIDI controllers on separate tracks.

Free Overlap: Parts and Groups may freely overlap without restrictions.

Remote Control: All important functions can be controlled from your MIDI keyboard.

MIDI Effects Processor: Realtime simulation of delay and echo effects.

Set-up definition: Define your personal set up and save it to disk.

Free Controller Mapping: Realtime conversion of any controller to any other controller.

Logical Edit: Use logical data-base style functions to manipulate any type of MIDI data.

Macro Sound Editing: Soundbanks stored in the Standard Synthworks format can be edited via the free "Satellite" Desk Accessory.

Universal Dump Utility: Saves and loads System Exclusive Data from most any synthesizer or sampler.

MIDI Time Code: Full support of Standard MIDI Time Code information.

Direct SMPTE Lock: Direct synchronization to SMPTE/EBU (24, 25, 30 drop, 30 non.drop formats) with Steinberg's SMP 24 or Timelock.

Pro-24 and MIDI-file compatible: Songs and patterns from the Pro-24 III sequencer can be loaded directly into CUBIT, as well as full support of MIDI-Song-File Standard format.

CUBIT runs on all ATARI ST computers with at least 1 MB of RAM.

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the secrets of COMPUTER COMPOSITION

Can a machine compose music and is it a genuine alternative to music composed by musicians? The first of this two-part series examines some of the rules of computer composition.

Text by Ian Waugh.

Illustration *Clive Goodyer*

PROGRAMS WHICH "COMPOSE" music in one form or another are arguably the most fascinating kinds of music software currently being written. MCM, one of the largest distributors of this type of program, says composition software currently accounts for 14% of the company's software sales. Personally, I expect that figure will increase in 1989.

Instant Mozart

METHODS OF COMPUTER Composition are not new. One automatic composition process has been traced back as far as Mozart (although there is some controversy over whether he actually invented it). It consists of a grid of, say, 11 rows by eight columns, in which each square contains a bar of music. A composition is produced by rolling two dice and selecting the first bar from column one and the row indicated by the dice. Bar two is selected in a similar way from column two and so on. The tricky part, of course, is to write 88 bars of music which fit together in this way.

Most of you will already be aware of the commercial composition programs such as those listed at the end of this article. Such programs have begun to appear only within the last two years, and it would be easy to form the impression that computer compositions are a new phenomenon. But nothing could be further from the truth.

Experiments in computer-generated composition were being performed way back in the 1950s. One of the earliest, and most famous, examples is the Illiac Suite programmed by Lejaren Hiller and Leonard Issacson on a mainframe computer. A variety of rules were employed to produce counterpoint and four-part harmony. Markoff Chains (a sequence of events, the probability of each of which is dependent on the event preceding it) were also used.

The computer concerned produced a list of numbers which had to be translated into musical notes by hand – a far cry from the almost instantaneous results we can now achieve by connecting the computer directly to an electronic instrument. Nevertheless, many of the processes devised by early experimenters have formed the basis of modern composition programs.

In order to put the subject of computer composition into perspective it is important to realise that a lot of heavy theoretical work has been done on the subject by many academics – although the results of their work do not normally find their way into the public eye. The human composition process is incredibly complex (we'll come back to this subject next month) and although it is a simple matter to create a set of rules which will produce an innocuous series of notes, if you're hoping to produce anything as complex as a pop song (yes, they are an incredibly complex, highly stylised form of music) or a piece of classical music *à la* Bach, for example, you have to enter the realms of AI (Artificial Intelligence).

Although many commercial composition programs include what are called "harmonise" functions, these are extremely basic compared with a musician's harmonisation ability. A rule-based expert system has been written which can analyse and harmonise four-part chorales in the style of Bach but it involves AI and predicate calculus.

Before we look at the type of music composition programs are capable of producing, it's probably a good idea to decide what we mean by music.

What is Music?

IN ITS BROADEST sense, music can be absolutely anything from the opening of a cash till (music to a shopkeeper's ears) to the (pseudo) silence of John Cage's '4ft 33"'.

To most people, however, music probably means a "good toon" – something melodically and harmonically pleasing. It may have a melody which can be hummed or a harmonic, melodic or rhythmic content which is sufficiently recognisable to tap or nod along to, something you can latch onto and "follow" in other words.

For the sake of the present discussion, perhaps we can agree that this includes popular music in its widest sense and the majority of classical music. This is what 99 percent of the population listen to. (Devotees and practitioners of serial, minimalist, atonal, avant garde and other styles of music are not being ignored so don't go away.)

As already suggested, the production of this kind of music by computer isn't easy and most of the work done in this area – and most of the composition programs available – tend to concentrate on less rigidly-structured output.

Even if we are able to program a computer to create music in a given style, there still remains the question of quality. This is probably the most difficult aspect of music to analyse successfully as personal preferences (dictated by many factors) play such an important part in music evaluation. But let's try anyway.

The Good, the Bad & the Musical

MUCH HAS BEEN written about what makes a piece of music good or interesting, but I don't believe anyone has yet produced a satisfactory definition. Most musicologists seem to agree, however, that the composer must give the listener something familiar while throwing in a few surprises along the way.

The familiarity is the style which will contain aspects of music the listener has heard before. This is the "latching on" process. Pop music, for example, grabs the listener straight away by hitting them with short, repetitive melodic and rhythmic phrases which are easy to identify and remember even after one hearing. This makes it easy to latch on to.

Even if you're hearing a piece for the first time your "ear" will be making assumptions about what's going to come next based upon what you have already heard. The surprise appears when the music does something you don't expect. It could take the form of a chord well removed from the original tonality, a variation on the melody line, a new rhythm pattern or a change in tone colour (instrumentation). These observations apply mainly to music with a discernible melody, rhythm and harmony but they may also be applicable to any type of music with a defined form and structure.

Now this is all very well, but after hearing the piece a couple of times you *know* what is going to come next – no more surprises – so how come it still "surprise" is not a surprise in the sense that it's something you haven't heard before but rather a contrast based on what has gone before. (There could be a connection between this and the reason people laugh at jokes they already know.) For example, if a piece which predominantly uses C, F and G chords throws in an E, that would be a surprise.

Well, so much for the theory, such as it is. As you can see, one of the fundamental problems presented by composition is trying to establish just what it is we're talking about.

Time to look at the methods employed by composition programs and see what sort of music they can produce.

The Generation Game

COMPOSITION PROGRAMS produce material in two ways: by generation and by manipulation. The generation process creates notes from scratch, manipulation involves restructuring existing material. Generation first.

Most commercial composition programs are labelled algorithmic. In this context algorithmic refers to the production of a composition in a series of steps using a system of rules. An algorithmic com-position will have a structure but you will probably not be able to predict the actual notes it will contain – this is the part random numbers play in creating a composition.

Algorithmic compositions are not (necessarily) totally random compositions, however. Random numbers are used to produce source data to filter through selection procedures. Usually the user defines limits or "percentage chances" for various parameters and events and leaves it up to the program (and the computer's random number generator) to supply the fine detail.

For example, you may set the probability that a rest will occur instead of a note to a certain percentage and you may stipulate the upper and lower pitch limits for the notes. You may also specify the maximum allowable step size between notes and even offer a list of acceptable notes to choose from. Algorithmic programs may have 10, 20 or more such parameters, many of which will interact with each other.

The algorithmic methods of note generation invariably treat pitch and rhythmic value as separate entities. That is, there will be one set of parameters to determine pitch and another to determine rhythmic value. The two are ▶

► mapped one onto the other to produce notes of varying pitch and duration.

This may seem a rather strange way of working to many musicians, but just to prove nothing is new, if we go back to the Middle Ages and look at the work of composers such as Machaut (c. 1300-1377) we can discover the foundation of this method of composition in isorhythms.

The process is very simple and involves applying a rhythmic cycle to a series of pitches of a different length. For example, if we apply the rhythm series (in 6/8 time) crotchet (c), quaver (q) and dotted crotchet (d) to the pitch series ABCD we get the following series which will play 12 notes before the pattern repeats:

cA qB dC cD qA dB cC qD dA cB qC dD

The following is the same thing written in AMPLE MCL notation and is probably easier to read. The / means hold the note for an extra beat. An upper case name means you move up in pitch, a lower case name means you move down:

A/BC// D/aB// C/Da// B/CD//

"Some computer operations have a foundation in traditional music composition, others are mathematical operations with no musical precedent."

Most composition programs can produce isorhythmic compositions although some are more suited to it than others. Intelligent Music's M and Hybrid Arts' Ludwig, for example, let you input note sequences and construct your own rhythmic cycles to apply to them. Dr T's Tunesmith will generate a rhythm pattern and then produce any number of pitch series to go with it.

Rhythm and Pitch

WHICH BRINGS US to an important question: which is the most important part of a melody, the rhythm or the pitch? Here are a couple of experiments to try; take the notes of a well-known tune and play them with a different rhythm. Then take the rhythm of the tune and play it using different notes.

As you probably aren't going to put MT down now and rush off to try this (but please do try it later) I'll tell you what I think you'll find – the rhythm plays a more important part in determining the character of the tune than the pitch.

Ever played the game where you tap out the rhythm of a tune and someone else has to guess what it is? Try it with the William Tell Overture – it's a giveaway. However, play a scale using the William Tell rhythm and see how many people recognise it.

If isorhythms seem an odd way to create a tune it's because we tend to think of a note as having a pitch *and* a rhythmic value, and to separate the two removes its musical identity within a composition. (Although there are several *avant garde* compositions which give the performers a series of notes and instruct them to play them with whatever durations they like.)

I'd suggest, therefore, that any program trying to produce a melodic tune in this fashion is immediately at a disadvantage. However, much serial and experimental music uses isorhythmic techniques. Algorithmic programs can be a valuable source of ideas and offer an easy way of playing very complex patterns.

Methodical Manipulations

THE SECOND METHOD of music creation used by composition programs is manipulation. This involves altering existing material rather than producing new material from lists of parameters. The manipulations may affect pitch or duration (timing) and it's interesting to note (I couldn't avoid the puns forever) that, like algorithmic programs, most manipulative operations treat pitch and duration separately, too.

In algorithmic procedures you will notice that unless you restrict a parameter so that only one result is possible the output is – obviously – going to be one of several possibilities. Some manipulation procedures (such as harmonisation and inversion) have fixed, as opposed to random results so you may expect a more predictable, cohesive piece of music from them.

Some programs with manipulation facilities let you input your own material (M, Ludwig and Intelligent Music's Jam Factory) which, again, gives you more control over the music – initially at least. Tunesmith does not allow user input (although it can pull a file from Dr.T's KCS if it is being run from within the MPE) but it can manipulate source material which it has previously created.

The sort of manipulation processes you may find include mapping pitches onto different rhythm patterns, reflecting the pitches across a specified pitch (chromatic inversion) and playing a series backwards (retrograde – this facility is also available in many Dr T's sequencers such as MIDI Recording Studio) – try it with Bach.

There are even more exotic functions, such as exchanging pairs of adjacent notes, expanding a series of crotchets by inserting quaver-length notes from the series' diatonic scale, mixing pitches in adjacent notes to produce chords and substituting rests for notes. You can also usually apply many random operations, such as adding random harmonies and dropping notes at random.

Some operations (such as inversion) have a foundation in traditional music composition, others are mathematical operations with no musical precedent. Some will yield musically valid results, others won't.

Maths and Music

SO FAR I'VE tried to keep the discussion general and talk, where possible, in musical terms. But when you examine the functions of both algorithmic and manipulation procedures you will see that they are predominantly mathematically, rather than musically, based (we'll look at the reasons for this and the consequences of it next month). Dr T's Fingers is an extreme case in point. It is almost completely mathematically-based and makes few musical concessions (you have to make these yourself).

Most algorithmic programs have a large number of parameters which determine the musical output and tweaking them in different ways will tend to produce different types of musical output. In order to do this by design rather than accident, the user must know what musical effect they will have on the output. It may help if you have a little musical theory behind you, although the musical novice can produce valid music by trial and error: listen to the output and tweak a few controls; if the music sounds better, tweak some more, if it sounds worse reset the last parameter and try something else.

Most composition programs come with demo files and some of these are very impressive. If you study the more tuneful ones, however, you'll find that the majority have very little random input.

If it's primarily melodic material you're after then notice that for all their parameters, algorithmic programs have no built-in musical rules to tell them, for example, that it's rather nice if the Mediant leads to the Subdominant (E goes to F in the key of C, say) and the Leading Note leads to the Tonic (B to C). Nor do they always work in terms of bars. Many programs, such as Tunesmith, Ludwig and M can be made to do this. Fingers can too but would rather not.

Some programs allow you to select a particular type of musical scale (Tunesmith has 46 options) but that alone is not enough to ensure a tuneful output although it can be useful to help create a tonal or modal harmonic centre.

Digigram's Big Band is one of the few composition programs which does have a musical approach. It processes material in terms of chord sequences, melodies, riffs and counterpoints without a mathematical function in sight. It will add a sequence of chords to a melody line or compose a melody to a given chord sequence. Left to its own devices it will compose both chords and melody.

Its composition styles, however, are fixed (and rather limited) and it tends to produce rather MOR (Middle of the Road) material. This trade off – ease of use against lack of control – means that its inability to create absolute rubbish is also an inability to create great music. However, the musical approach is certainly refreshing.

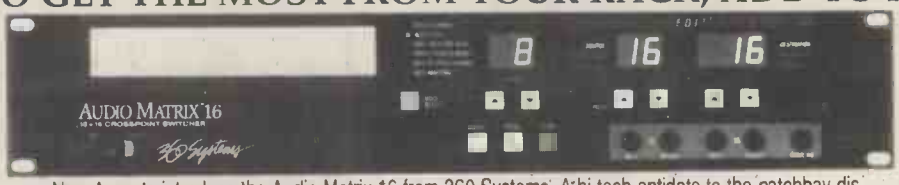
The current crop of algorithmic programs are reminiscent of the old analogue modular synthesisers. You set the controls on the front panel, press a button (cross your fingers) and see what comes out.

Next month we'll take a look at the human composition process and compare it with the methods used by composition programs. ■

THE PATCHBAY IS DEAD. LONG LIVE THE PATCHBAY.

Ask a sound engineer to name the likeliest source of connection problems in the studio, and chances are he'll point the finger at his patchbay. The patchbay has been a standard fitment in recording studios for almost as long as tape and microphones. And as studios have become more complicated, so the patchbay has become even more of an engineer's nightmare. What should be a quick, easy way of connecting signals from one source to another has become a bird's nest of sockets, leads, and indecipherable labels – all of them contributing to a decline in sound quality, and giving studio users more headaches than the day's fifteenth vocal take.

TO GET THE MOST FROM YOUR RACK, ADD TO IT.



Now Argents introduce the Audio Matrix 16 from 360 Systems. A hi-tech antidote to the patchbay disease. Within its smart, 2U-high rack-mount exterior lurks a digital routing system so powerful, it can direct the signal from 16 sources (instruments, FX sends, channel inserts) to 16 signal-processing units – in any combination. Any input can drive one or more outputs. Because all the routing is performed electronically, the Audio Matrix eliminates the drudgery of unplugging cables, and makes a significant contribution to reducing noise levels. Using the front panel controls of the Audio Matrix 16, you can audition all routings, sounds and effects. When you're happy with them, you can commit them to a built-in memory that'll store 100 user configurations, and recall them instantly via the front panel or MIDI patch-change commands. And those configurations can then be ordered into 27 different performance chains, each with as many as 32 steps.

GOODBYE CABLES, HELLO SWITCH.

If your problems are confined to routing MIDI devices, 360 Systems have a simpler, more compact, and cheaper solution – the MIDI Patcher. An eight in, eight out routing matrix, it shares its bigger brother's smart styling, easy-to-read display, and 100-patch, instant-access memory. And each of those patches can contain as many as eight different program-change commands. The MIDI Patcher can also initiate MIDI data dumps from its front panel, send an all-notes-off command if you disconnect a keyboard that's still playing, and automatically test your entire MIDI system for wiring faults. All at a price you'll find difficult to beat.

A NEW PLACE FOR BASS.

Completing the 360 Systems line-up of smart rack units is Pro MIDI Bass. It's a sample replay unit dedicated to bass sounds, up to four of which can be triggered by any MIDI device at any time. (Standard sounds include Precision, Rickenbacker and Steinberger bass guitars, a double bass, and an analogue synth bass.) For each sound you can program your own controlling keyboard zone, plus settings for loudness, filter, decay, release, and accent crossover point. And for 1989, Argents are not only reducing the price of the Pro MIDI Bass – we're filling all the machine's empty EPROM slots with sound chips of your own choice. So depending on which chips you select from the extensive 360 Systems library, you can have as many as thirty different bass sounds onboard – from the upright acoustic to the downright strange.

Argents

20 Denmark Street
London WC2H 8NA
Tel: 01-379 6690

AUDIO MATRIX 16, £598; MIDI PATCHER, £199; PRO MIDI BASS, £399; ALL INCLUDING VAT.
PHONE FOR DETAILS OR DROP IN FOR A DEMO

emotional FOUNDATIONS

Pioneer of acid house and deep house, Marshall Jefferson places songs and musicianship above sampling and studio trickery. Interview by Simon Trask.

"WITH ONE GROUP I produced recently, I had this tune and I just had to have real horns on it. Today everybody's got horn samples, string samples, guitar samples, but they just don't sound the same as the real thing. The record company tried everything they could to talk me out of using real horns, so I went out and got them, paid for them myself, and had them play on the tune. Everybody flipped over it. I just knew it had to be that way."

Marshall Jefferson is a man with a mission, and the recording studio is his battlefield. The mission: to put the soul back into music. The opponents: technology and a profit-hungry record industry. On a current tally, Jefferson is winning. Things are going his way, and for anyone who likes "warmth", "mood" and "emotion" in their music (three words which Jefferson uses a lot during our conversation) that can only be a good thing. Check out Ten City's soulful Jefferson-produced debut album *Foundation*, the deeper-than-deep house 12" single 'Open Our Eyes' by Marshall Jefferson Presents The Truth, or his heavenly 82bpm remix of Dusty Springfield and the Pet Shop Boys' 'Nothing has been proved'. It's a small if representative part of his current output.

Chicago-born Jefferson, now 29 years old, is much in demand as a dance-music producer/musician/songwriter – or, as he describes himself, a "listener". Yet little more than four years ago he was working for the Chicago post office and rocking out in his spare time to the likes of Led Zeppelin, Black Sabbath and Deep Purple. Not many people have made the transition from Deep Purple to deep house, but Jefferson is an unorthodox listener. He grew up with the thudding beats and screaming guitar solos of heavy rock while all his friends were into disco, then when heavy rock started to go commercial he discovered the Chicago house music scene in its infancy. Since that time he has emerged as possibly the single most influential figure in house music. From early jack tracks such as 'The House Music Anthem –Move Your Body', 'Ride the Rhythm' and 'Time Marches On' through the seminal acid of 'I've Lost Control' and 'Acid Tracks' to the seminal deep house of 'Open Our Eyes' and his production work with Ten City, Jefferson has defined the direction of house music.

These days Jefferson spends a lot of time in the UK, where he is constantly in demand for production work and remixes. He's also in the process of setting up a UK-based record label, which will offer an outlet for both UK and US acts, and is producing Kym Mazelle's debut album at Matrix Studios in London. Yes, Marshall Jefferson is a busy man.

OUR INTERVIEW TAKES place in a small, cluttered hotel room in London's Lancaster Gate. Clothes, cassettes and a copy of Tina Turner's autobiography are strewn across the floor, the phone rings every ten minutes, and an over-zealous cleaning lady periodically demands that she be let in to clean the room. Amidst this chaos the genial figure of Jefferson reclines on his bed, offers me a beer and somehow applies himself to answering my questions with both thoughtfulness and humour.

"Right now I'm starting up my own record label back in Chicago", he reveals, "and I've been building up a roster of live musicians to work with there. It's taken about three years to get everybody together, but now they're all ready to go. We've got horns, strings, bass, guitar, drums, percussion . . .

"If you wanted the Motown sound then you had to go to Motown and use their musicians, if you wanted the Philadelphia sound you had to go to Philadelphia and use their musicians. Now if you want to get the Chicago sound you'll have to come to Chicago and use our musicians."

It seems that the label won't be exclusively for dance music, however. Jefferson used to play guitar in various rock bands before succumbing to house music and reactivating piano skills learnt in childhood. Now he's talking gleefully about upsetting a lot of people by forming a rock band and recording double albums full of lengthy guitar solos. Can this really be the man who brought us deep house?

Jefferson's introduction to technology and the recording studio came in 1985. As he recalls: "I had a good job at the post office, so I could basically buy any equipment that I wanted. Jesse Saunders was making records then, and I wanted to make better records than he did."

A trip to the local music store was in order. Unfortunately, Jefferson soon fell foul of some classic dodgy salesmanship.

"The guy said 'with this sequencer you'll be able to play keyboards like Herbie Hancock', and I was going 'Wow!'. So I went and bought a JX8P, TR808 and Yamaha's QX1 sequencer. What he didn't tell me was that I couldn't sync up the 808 and the QX1, which was why my first record, Virgo's *Go Wild Rhythm Tracks*, ended up being just 808 drum beats."

Jefferson remembers with some amusement his introduction to the recording studio at the hands of Vince Lawrence, Jessie Saunders' producer.

"It took four months to do that EP, at least 80 hours of studio time. Basically he didn't want anyone else in the business, and he was trying to make it all sound more difficult than it was. There'd be dust on the console, and he'd be going into this whole thing about dust, how you

had to have the right amount of dust on the console, not too little and not too much!"

The path of progress doesn't always run straight. For instance, who would have guessed that being sold two instruments with incompatible syncing systems would have led to a new style of music. For when Jefferson searched around for an instrument to sync up to his 808, he alighted on another Roland instrument: the TB303 Bassline. He first used the 303 on Sleezy D's 'I've Lost Control', which he recorded back in the summer of 1985.

"It was the day I got the 303," he recalls. "Sleezy was in the basement, and we just said 'let's go for it'. That was the first record I took to Ron Hardy at the Music Box, and he would play it six or seven times a night. In fact, it was bigger in Chicago than 'Move Your Body'."

The TB303 is used in a restrained way on the track, and there's no use of the timbral changes which were to characterise 'Acid Tracks'. Yet amidst the growling voice and atmospheric noises it clearly brings a new, sharp-edged sound into house.

Jefferson recorded Phuture's 'Acid Tracks' with DJ Pierre in late 1986. Like 'I've Lost Control', it was big in the Chicago clubs, but this time around the fuse was lit for acid house to take off in a big way. Jefferson explains:

"I gave Pierre my TB303 because I was just tired of using it, I didn't like it any more. The big difference between me and Pierre was that he was a DJ and I wasn't. He made the mistake of telling all his DJ friends that it was a TB303 on 'Acid Tracks', so next thing I knew, within four months there were about 60 acid records out, and within five more months there were over 1000 - just in Chicago."

The consequences of this acid deluge were inevitable. Jefferson elaborates:

"Acid house just cancelled out Chicago's dance music. It wiped everything else off the dancefloor, because you couldn't play anything else around it, it was too fast, too energetic. Also, before acid you could have a huge hit in Chicago; 'I've Lost Control' sold 70,000 copies there. But what started happening was that a huge dance hit in Chicago would sell only 5000 copies, because acid records were coming out at the rate of about 60 a week. None of them were terrible, but when you play 60 records in a row and they've all got the same instrument, basically the same beat, and somebody's girlfriend singing badly over it all, you kind of get worn out! Basically, there were too many acid records, because they were too simple to make.

"People were saying I started it all, but I'd say 'I hate that shit'. It was where everybody else was going, and my natural way of thinking is that I'll go the other way; that's what I've always done."

In fact, Jefferson had already moved on to new pastures with 'Open Our Eyes' by Marshall Jefferson Presents The Truth, a slice of atmospheric house which built on the style of his earlier Jungle Wonz tracks. 'Open Our Eyes' is more than one-and-a-half years old now.

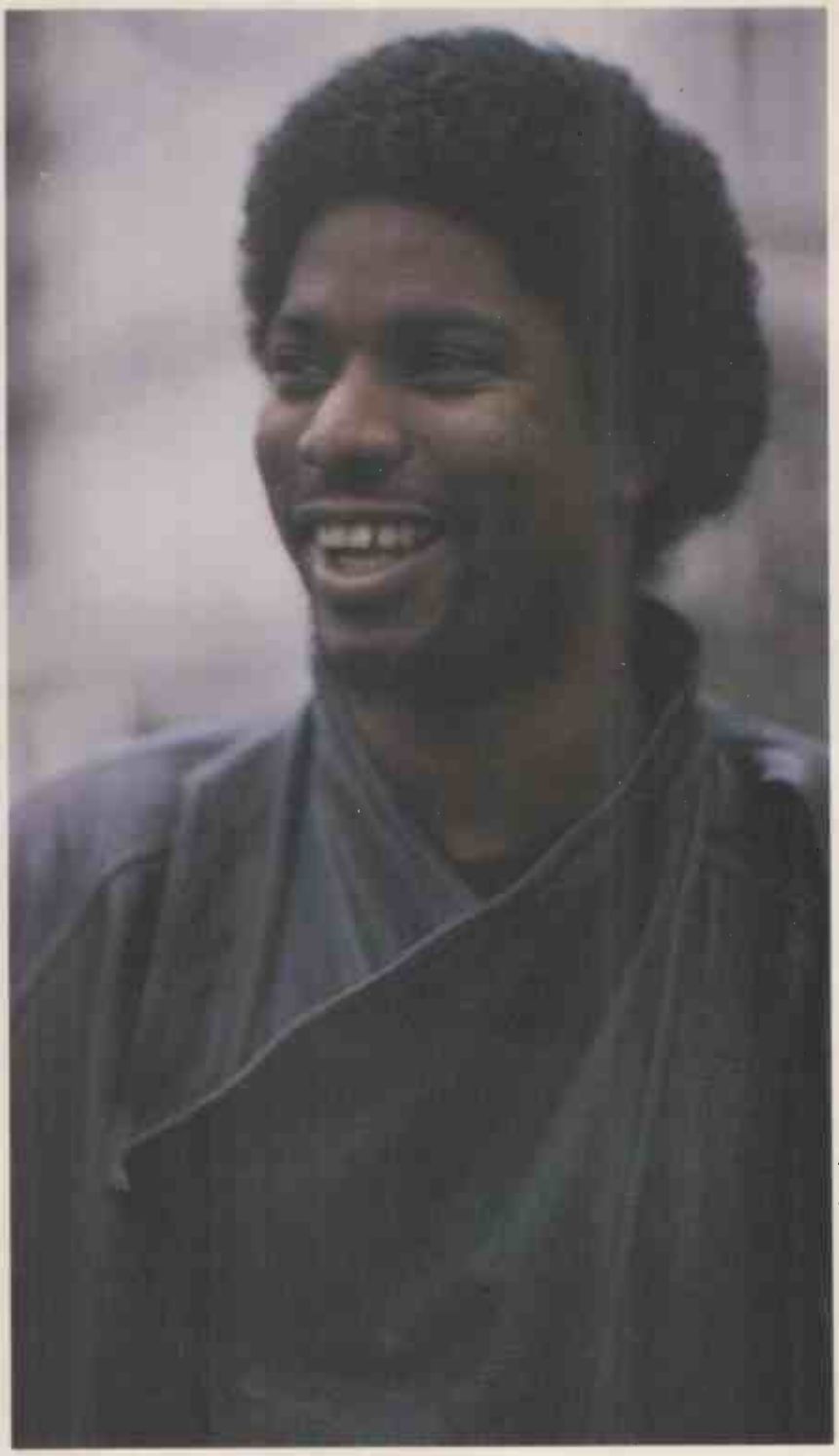
"I didn't feel a real need to put it out," he says, "until I saw the acid house thing happening and I just got mad. I wanted to do something different. People were saying 'Ain't nobody going to play it, it's too slow', and I thought that too, but it just seemed the right thing to do. Everybody was going acid-house crazy in Chicago."

Along with the music of Fingers Inc, 'Open Our Eyes' signalled the arrival of a new style of house which has come to be called "deep house". Jefferson reveals an unlikely influence on the track:

"It took me back to Pink Floyd and *Dark Side of the Moon*. They had all the clocks and stuff on it, and I had the waterfall and the birds. In New York people just flipped over it; there were reports that people were crying on the floor when they heard it.

"I was just conveying a mood and emotional content. Deep house has a lot to do with the way you mix the tune and the sounds you get up. I must have remixed 'Open Our Eyes' more than twelve times, and I still wasn't satisfied with the way that it came out. The bass plays a large part in the track; people feel it and hear it at the same time."

Jefferson's approach to songwriting might surprise anyone who thinks that all dance music is pieced together in the studio like some kind of aural patchwork quilt: ►



Photography *Matthew Vosburgh*

"If you sample somebody else'e record then you're limiting yourself musically - also, you're committing the ultimate crime against music."

"Pierre made the mistake of telling all his DJ friends that it was a TB303 on 'Acid Tracks' – next thing I knew there were about 60 acid records out."

► **"I can't write a song in front of the keyboard. Usually I'm in the shower or I'm driving in my car and I suddenly hear the finished song in my head. Melody, harmony, horns, strings, bass, guitar, congas, drums . . . *every*thing. Then I've got to rush to a keyboard to get it all down before I forget. That's how I write."**

PERHAPS EVEN WORSE than acid house in Jefferson's eyes is sample-based music, in particular the music of a certain Mr Todd Terry. Terry is not flavour of the month with the dance musicians of Chicago and Detroit. Not only does he sample bits of their music, but he's threatened to sue anyone who samples *his* music. So what if someone samples a bit of his music which contains a bit of their music? It all starts to get a bit daft.

Gentleman that he is, Jefferson refrains from being impolite about Terry, but decides it's time to be forthright on the sampling issue in general. Sampling afficionados of a nervous disposition are advised to skip the next few paragraphs.

"I think sampling's ruining the music industry. If you sample somebody else's record then you're limiting yourself musically. Also, you're committing the ultimate crime against music. You're taking something that a real musician has worked years to strive for, and you're sampling them. It's really as low down as you can get. I mean, these are musicians who worked 15 hard years before they even thought of recording. You can't play drums so you sample someone else and put them all over your record. All those musicians are broke now, but you're sampling their records and you're thinking that you're the greatest in the world. It really hurts me to see things like that, all the rappers crossing their arms and saying 'I'm paid in full'.

"Rap music has this mentality that you have to sample. *Why*? It's really making music sound cheap and tacky right now, at least to me – nobody else seems to be noticing. When you sample an old record and put it on a 24-track recording, it sounds just like an old record being scratched. There's no depth, there's not the same emotional content. Basically it sounds dry and cheap, there's no fullness or warmth. I don't understand it.

"Stop sampling people from the past; instead of sampling a drummer, *get* a drummer. Everybody in the music business, all they're thinking about is money, money all the time. Yet when you think about it, if you've got one gold album then you've made enough money to last you for life, as long as you're not a drug addict. There's only so much money you can spend, so why not try something new, something innovative?"

This one could run and run, but in the meantime Jefferson has plenty more to say about the use of technology in music:

"Music's gone stale because of technology. There's no individuality. Everybody's using the same instruments and basically the same sounds. That's the natural scheme of things nowadays, not only because everybody can copy off of everybody else so easily, but because the industry

encourages copying; record companies want safe formulas.

"Everybody's using the wrong sounds. Every song you hear now has got loud drums on it; I *hate* loud fuckin' drums. They have to twist my arm to put loud snares and stuff on record. That's what everybody else is doing, and I hate it. It sounds so digital, so mechanical, and it kills the variety of songs. It would be fine if you just heard one record a day with loud drums on it, it would be perfect. But all day? Boom-ka-ta-boom-boom-ka-ta! I just can't take it. Everything just sounds so alike today. I just hear a commercial sound, and it gets to me.

"People don't go for what sounds good to them, they go for what's technically good – like, say, a good clean snare or a good clean kick. I have to EQ all my tunes myself now, because every engineer wants to get the kick drum to sound thin so you can *hear* it, but I want my kick to go "boom boom" so you can *feel* it. I'm always having arguments with engineers about this, because they'll say 'you can't hear that kick'. They think I'm crazy. The moment I leave the room they'll sneak a bit of EQ in. I just say 'look, man, just get away from the board and I'm gonna do this myself'. It's not that they aren't good engineers, but they're programmed to think a certain way; I know how I want my music to sound, and it's a different way."

Jefferson uses engineers when he's recording, but then he records everything flat, only adding EQ when mixing. Similarly, everything goes down dry when he's recording; all effects are added at mixdown.

Listen to any Jefferson production and you'll hear that reverb is an important component of his sound. You may well suppose that AMS or Lexicon would figure prominently here, but if so you'd be supposing wrongly.

"I like the MIDIverb II," he reveals. "In fact, in a lot of cases I prefer the MIDIverb to an AMS. The AMS sounds better than a MIDIverb in one case, and that's when you're using an SSL console. AMS is more compatible with SSL consoles, but the MIDIverb is more compatible with analogue consoles. The only thing people complain about with the MIDIverb is that it's preset, but shit, if you've got a reverb which sounds like a £6,000 reverb but only costs £200, why complain? I stock up on MIDIverbs – I've got about 12 of them."

When it comes to recording desks, Jefferson is blunt about what many people consider to be the ultimate.

"I hate SSL consoles. It's extremely hard to get warmth out of them. I've tried using different EQ, but still the end product is SSL; there's a particular sound to that board.

"What has happened is that record companies tend to go for SSL because it's the most expensive board and because it's totally automated. That's the industry way of thinking: perfection. But in truth it's not really perfect, because there's no warmth.

"Stevie Wonder, who's used synthesisers from the beginning, nowadays he's just not using the right sounds, I mean warm, full sounds. He's using these thin digital sounds. SSL console; you hear it all over his music. Michael Jackson, too: SSL console. See, with *Thriller* and *Off the Wall*, those albums had a certain warmth. It wasn't just the real instruments. I could use all synthesisers on a track and it would still sound warm. I go for warmth instead of cleanness."

Ironically, Jefferson is working with an SSL desk at Matrix Studios. However, it so happens that Matrix are the proud owners of the second SSL console built by the company, and Jefferson reckons it has a warmer sound than later desks. It's an interesting point: digital technology is supposed to be consistent, yet it's not unknown for manufacturers to make changes to the components they use on different production runs. These in turn could conceivably result in variations in sound quality.

Back in Chicago, Jefferson has his own 16-track home studio based around a Fostex E16, though he's planning to upgrade to an Otari 24-track soon.

"At the moment, everything goes through a Tascam eight-channel board", he explains. "I love that board. I've got the drums coming through a Yamaha DMP7 digital mixer, but that's then put through the Tascam. Bringing the drums through the DMP7 alone makes them sound very thin; there's no fullness. But bringing them through the Tascam board, the warm analogue sound is there. It's not the EQ, it's the actual sound of the board."

The drum department of the Jefferson home studio is taken care of by his Roland TR808 and 707 drum-machines. Perhaps surprisingly, he's only relatively recently started using the TR909. Roland score again on the synth front, though it's not their recent synths which attract the Jefferson seal of approval:

"I've still got the same old JX8P that I started out with," he declares proudly. "Man, those deep bass sounds, those smooth strings, I'd pay a £10,000 ransom for that instrument."

So Marshall Jefferson does love technology after all – it just has to be the right kind of technology, used in the right kind of way.

"I've mastered making my own sounds on it," he continues. "Every sound I get is out of the JX8P, except for piano sounds. For them I use either the JX 'Piano 2' or a real piano. Very few sampled pianos sound good to me. I used the Prophet 2000 on 'Move Your Body' and that was good, but somehow I'd get inconsistent piano sounds with it, and in the end I didn't really want to know. Now I use mainly real piano."

Among the JX's preset patches, Jefferson is partial to the smooth, silky strings of 'Soundtrack'. In fact, the patch is much in evidence on Vicky Martin's 'Not Gonna Do It', a Jefferson-penned track which he produced in his home studio.

Jefferson always hires in a JX8P when he's working in the UK. But, instead of carrying around cartridges of JX sounds, he programs the sounds he wants at each session. Now, most musicians jealously guard their sounds, and wouldn't dream of leaving any behind in a hired instrument. But, in typical contrariwise fashion, Jefferson has other ideas.

"I leave sounds lying around in the machine in the hope that they'll get used on other records", he reveals, adding by way of explanation: "Everyone else is digital, so I go analogue."

Finally, to all those people who want to copy Marshall Jefferson a second time around, he has the following words to say:

"People think that all there is to copying Marshall Jefferson is copying the drums, copying the piano, copying the bassline. But the only thing they need to do if they're studying me is study the emotional content of every record."

Amen to that. ■

"People don't go for what sounds good to them, they go for what's technically good – a good clean snare or a good clean kick."

THE AMERICAN WAY
Winter NAMM 1989

Running less than a week before the Frankfurt trade fair, the American NAMM trade show set a scene of 'refinement' for the music industry this winter. *Report by Bob O'Donnell, Chris Meyer and Dan Rue.*

QUICKLY AND QUIETLY it came upon us. A feeling of renewed confidence in the electronic musical instrument industry. Not that things were ever bad, but it had seemed over the last year or so that not everyone knew exactly where or how things were going. This year's National Association of Music Merchants (NAMM) convention put almost all those concerns to rest. Strolling through the aisles of the Anaheim Convention Centre, where the winter show is held every year, it seemed obvious that companies and dealers are starting to look a little more to the long-term future. There were noticeably fewer "head in the clouds" predictions of how well equipment, technology or markets were going to fare and noticeably more new instruments with planned futures ahead of them.

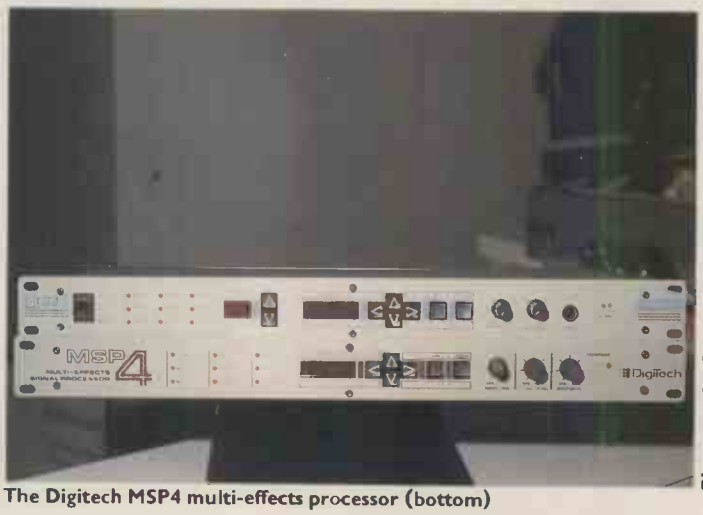
All the regular keyboard exhibitors were present with new gear to display – **Roland** their D5 and W30, **Yamaha** their V50 and C1 computer, **Kawai** their K4 and K1 Mk II, **Korg** their mighty T1 – details of which can be found in the Frankfurt show report elsewhere in this issue. One company missing from Frankfurt was **Ensoniq**, whose European distribution was in the process of changing hands during the show (speculation about which provided one of the main sources of gossip), making NAMM the company's only winter appearance. Responding to the demands of the marketplace, Ensoniq unveiled a rack-mount version of the EPS sampler, the EPS-M (US price: $3295). The 3U-high module offers all the features of the keyboard EPS, including the sequencer and the patch select buttons (interestingly enough), but also includes 1.7Meg of RAM (1 Megaword) standard, as well as a built-in SCSI port and eight polyphonic individual outs – in other words, a souped-up EPS.

Ensoniq also have a new line of Signature Series samples for the EPS (US: $39). Each of the six beautifully-packaged

The Korg T1 Total Workstation

Ensoniq's EPS-M – EPS in a rack

Peavey's keyboard debut, the DPM3



The Digitech MSP4 multi-effects processor (bottom)

Photography *Rose Roumseville*

new volumes includes three disks by a well-known artist or producer, including Nile Rodgers and sought-after session guitarist Paul Jackson Jr, as well as complete documentation.

One talking point of NAMM was **Peavey**'s first foray into the world of synthesisers, the DPM3 Digital Phase Modulation synthesiser (projected RRP: £1599). (The word in Germany had it that the DPM3 had been designed by Ensoniq, but since they weren't about to confirm or deny it, it remained pure speculation.) With a 20,000-note, nine-track (eight instrument, one percussion) sequencer, and onboard digital effects which include reverb, early reflections, delay, EQ, chorus, flange, phase shift, distortion, and more, the DPM3 also falls into the popular category of a *work* . . . no, I won't say it since Peavey don't want to. Anyway, the spec's quite impressive – a completely software-based architecture, housing 32 oscillators of 16-bit PCM wave samples, 16-voice polyphony/multitimbres, 100 internal programmable patches and 110 individual drum patches, arranged in five drum kits. The DPM3 essentially creates its sounds much in the fashion of Roland's D50 and Korg's M1, with 16-bit PCM samples. One advantage of the DPM3, however, is that you can load in your own 16-bit samples using the MIDI sample dump standard or with the onboard 3.5" floppy disk drive (also used to store voice and sequencer data). How did it sound? Well, we're going to have to wait a while on that one. Although Peavey had noise emitting from the unit, they admitted that the instrument was unfinished and the sounds were unrepresentative. If things progress well in the fine-tuning stages, Peavey will have made a strong initial entry into the keyboard market.

Elsewhere in the Peavey booth, the new MIDI Librarian was displayed. This single-spaced rack-mount device is basically a 3.5" disk drive providing 64K of static RAM and 16K of non-volatile RAM for storing MIDI SysEx data to disk. MIDI Librarian will let you store chains of SysEx functions, request dumps from MIDI devices, and loop dump requests for synths that won't let you request more than one program at a time. Depending on the price they settle on (they didn't announce one at the show), this could be a big hit.

Peavey had started to step into the MIDI arena over the past year or so, but it'll be interesting to see how things develop after this quantum leap.

As with other manufacturers, upgrading existing instruments was the theme at **Kurzweil**'s booth. The K1000 Special Edition (SE) (£2600) includes all the capabilities of the original K1000 and adds aftertouch; an expanded list of control sources so that, for example, staccato and legato touch could control the attack envelopes on sounds; a compare function; multiple levels of programmability for easy and complex editing; and other refinements. The 1000PX Plus includes all the K1000 sounds, plus the sounds of the PXA soundblock as standard, adds additional front panel buttons for easier programming and incorporates all the software refinements included in the K1000 SE – all for the same price as the original K1000PX. In a similar vein, the new K1000AX Plus Acoustic Expander (UK price yet to be confirmed) combines the sounds of the SX string expander and the HX horn expander into a single unit, as well as having the new functions in the K1000PX Plus. Speaking of which, the company also announced new Sound Blocks for existing owners of the SX and HX expanders: the SXA and the HXA (£485).

In addition to the entertaining magician and his attractive assistant at the **Simmons** Box o' Trix booth, there were several new items that took advantage of technologies Simmons have developed over the years. First off, the inexpensive new SDS2000 Digital Drum Kit (£691.73 including five pads) uses some of the same digitally-sampled sounds in the company's Trixer (which first came from the company's SDX 16-bit sampler). Eight preset kits and two user programmable ones can be selected, two additional sets can be read off optional ROM cards and an optional digital reverb (approximately £200 more) can be programmed per kit. Five individual outputs as well as master stereo outs are available.

For those interested in drum triggering, Simmons had the ADT Acoustic Drum Trigger (£450) which incorporates the Learn function found on the Trixer. It includes 50 patches and has crossfading, switching and layering functions for expressive MIDI triggering. If you'd prefer something a little more simple, Simmons also unveiled their Drum Huggers (£319.13; £109.97 for master; £52.53 per slave), four small electronic pads and a master controller, which is also a pad, that can be attached to acoustic drums and be used to trigger drum sounds (or whatever) with simple MIDI note commands.

MOVING ON TO the subject of recording, several companies were offering new items to the ever-growing fraternity of home recordists.

At the higher end of the scale, **Tascam** have a new ½" 8-track machine, the TSR8 (£2250), which sports the same series and parallel-capable synchroniser ports found on the company's MSR16 16-track and 238 8-track cassette. It also includes built-in dbx type I noise reduction which can be defeated on track eight only for sync applications or in groups of four channels, as well as an auto-rehearse mode.

In cassette multitrack recording the news was two 6-track recorders. **Sansui** bowed their WSX1 (US: $1949), which also includes a built-in 8×2 mixer with fixed EQ and an effects send, and a built-in stereo mixdown cassette deck. The company also have the rack-mount MR6 (US: $1299), which only offers the double-spead six-track recorder from the WSX1; the SY1 Sync unit (US: $299) which permits remote operation of either two recorders, allows two recorders to be slaved together for 12-track recording, and includes a MIDI-to-FSK converter (unfortunately without Wong Position Pointer information); and the MX12 (US: $1199) 12×6×2 stand-alone mixer. **Vestax**, on the other hand, have the rack-mount MR66 (US: $1399) 6-track recorder, which also includes a 34-point patchbay on its front panel. At present, however, the situation regarding UK distribution is uncertain.

Several companies also displayed some very attractive-looking mixers geared specifically towards the MIDI studio. **Rane**'s SM82 Stereo Line Mixer (approximately £425 plus VAT) crams eight stereo inputs, one stereo effects send, balance controls and an expansion out jack into a single rack space. The Unity 8 (US: $445) from **Passac** also offers eight inputs in a single rack space but has mono inputs and two stereo effects sends as well as pan controls for each channel. The Unity 8 has two sets of stereo outs, one intended for monitoring and the other for connection to another mixer.

Tascam's MM1 keyboard mixer (£649) includes four stereo input channels, 12 additional mono input channels, four stereo effects returns, solo capabilities, direct channel outputs and most importantly, MIDI-controlled muting with up to 99 settings being able to be recalled via MIDI. On top of that, the MM1 can either be rack-mounted or function as a table-top mixer.

Finally, for those of you who want to put everything together into an organised studio workspace, several companies have interesting new furniture. First off, **Invisible Products Corp** showed their Model MS2048 Workstation (US: $299), for those people who want a computer-centred workstation, rather than a keyboard-centred one. The main desk top is 30"×48"×0.75", with one adjustable-height 13.5"×42"×0.75" shelf above it. For those of you with a larger setup (and larger budget), **PlayStation** offered several configurations of their very attractive studio furniture. On display at the NAMM show was the monstrous Mothership 200, which offers 200 rack spaces, several shelves, room for a television monitor, speakers and more. It's guaranteed to turn your home into the bridge of the Starship Enterprise.

As you might have expected, one of the big words at NAMM was "multi" – as in multi-effects – and there were a number of new entries into the market. **ART** have expanded on their popular Multiverb with the Multiverb II (US: $599), Multiverb EXT (US: $675) and the "super effector" geared towards guitarists, the SGE (US: $649). Like its namesake, the Multiverb II gives you four 16-bit effects at once and offers 200 memory locations, but it adds real-time MIDI performance controls to the package. The EXT adds a sampler with a continuous loop option and extended delay times (up to two seconds). Finally, the SGE ups the ante to nine simultaneous effects including all the digital effects of the Multiverb II as well as digitally-controlled analogue effects such as a harmonic exciter, and distortion. The SGE doesn't have sampling but it does have all the real-time MIDI controls of the other new Multiverb units.

If you'd prefer just a straightahead digital delay, ART also have something for you in the form of the non-programmable ▶

►Delay System V (US: $349) and the programmable Delay System VII (US: $499), which also includes sampling. Both units offer full 20-20kHz bandwidth and ART's new Harmonically Accurate circuitry for clean A/D/A conversion.

Yamaha unveiled their new SPX900 (£629), which utilises the same full-bandwidth effects processing of its big brother, the SPX1000 (£999), and features 50 presets in ROM, 49 RAM presets, five 16-bit effects at once, 90dB dynamic range, parametric or dynamic equalization, and the same control layout as the SPX90.

DigiTech's newest arrival is the MSP4 (US: $370) digital multi-effects processor. It can produce four 16-bit effects at once at a 12kHz bandwidth, offers dynamic MIDI control, 128 user-programmable memory allocations, and a host of effects, including reverbs, choruses, flange, echoes, doubling . . .

A new item from a company called **Cadence** is the DSP System One (US: $899), a true stereo 16-bit multi-effects processor. It comes with 64K standard memory, or in an "enhanced" version with 128K (US: $949), or "deluxe" version with 256K (US: $999). Stereo 20kHz bandwidth supports such effects as flanging, chorusing, delay, and reverb, as well as 48kHz stereo or mono sampling, and 96kHz "2X" mono sampling which gives an additional 3dB of dynamic range. Two effects can be layered with most of the programs, and the unit includes MIDI control functions via the MIDI In and Thru jacks. The controls are simple and straightforward, and the front panel also sports an easy-to-read backlit LCD.

In the areas of more specific signal processors, **Rane** have a new line of MPE MIDI programmable equalisers, due to become available in June '89: the MPE 28, single-channel, ⅓-octave unit; the MPE 14, two-channel, 14-band, ⅔-octave unit; and the MPE 47, four-channel, seven-band, one-octave unit. All have 128 program memories, full MIDI implementation, balanced inputs and outputs, and +12/−15dB filter ranges. The list prices have yet to be announced.

All in all, there seemed to be a growing trend towards quite a bit of MIDI control.

Digital Music Corporation have an attractive low-cost alternative for those trying to sort out their MIDI routing mess. The MX28S (US: $89) is 2X8 MIDI patchbay, with A/B/off switches per output and data activity LEDs per input.

From Altadena, California come a number of interesting little units made by **Musicsoft**. Most intriguing is the "MIDI-MAN" MIDI Tape Recorder Interface (US: $179), which converts MIDI into a signal that can be recorded onto audio tape (and played back in real time). MIDI-MAN supports low and high grade tape decks (the recording quality determines how dense the information you can reliably record and play back can be), aftertouch filtering, some channelisation, and the ability to record SysEx dumps up to 2000 bytes long. Others have tried this trick in the past but have failed due to delays and unreasonably low data density restrictions; we're looking forward to trying a MIDI-MAN ourselves. Other Musicsoft news includes an updated sequencer, PowerStation (US: $129), for the Commodore 64/128 and Apple II, an IBM G10 editor/librarian, an Oberheim Matrix 1000 editor/librarian for the Atari ST, a Roland DI10 editor/librarian for the Amiga, and the ProSound series samples for the Akai S1000. Diverse.

Rack-mount equipment is great. But after a while, the racks themselves start to eat you out of house and home (plus there's the difficulty of trying to transport them to a friend's house). Thus, very welcome from **Anatek Microcircuits** in Canada is their line of Pocket Products – a merge box, a data filter, a sequencer, and a box that takes any volume pedal in, turns it into continuous control data, and merges it with a MIDI signal passing by. Each box is the size of a pack of cigarettes; each (with the exception of the sequencer, for which no price has been fixed) costs $99 in the States.

So, there were no earth-shattering developments lurking around every corner at NAMM, but the atmosphere of "refinement" was a reassuring and encouraging one. And the bottom line is: would you rather know that your six-month old pride and joy has just been superseded or that you're going to have a wait a while for the next "instrument of the decade", but when it does arrive you'll have time to get to know it well before you feel it's out of date? ■

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THE DIGITAL MUSE

TURTLE BEACH SOFTWORKS

SAMPLEVISION

Software for the IBM PC

This new American program brings generic sample editing to the IBM and adds several facilities not available in any other software. Review by Dennis Miller.

DESPITE THE PROLIFERATION of software for the Atari ST computers, you'd be mistaken in assuming it's the only computer receiving attention from software writers. In the States the Macintosh has a head start over the Atari; in Europe the Atari has a significant cost advantage over the Mac. Then there's the IBM PC . . . American company Turtle Beach Softworks, have just released a sample editing program for the IBM called SampleVision. Its tool kit includes Fade/Scale, Normalise, Mute, Interpolate, Merge, Mix and Reverse as well as a collection of handy loop-editing features. It also lets you peek at your sample in some pretty unusual ways, including what it calls Animate and Browse. Sound interesting?

Hardware Requirements

SAMPLEVISION IS A generic program which currently supports the following samplers: Akai S1000, S900, S700, X7000 and S612; Casio FZ1, FZ10M; E-mu Emax, Emax SE and Emax HD; Ensoniq EPS and Mirage; Korg DSS1 and DSM1; Oberheim DPX1; Roland S10, S220, S330, S50/550 and MKS100; Sequential Circuits Prophet 2000 and 2002; Yamaha TX16W; and the Sample Dump Standard. It requires an IBM PC/XT/AT or compatible and will also run on the Yamaha C1. Because of its graphic orientation, you'll need 640K memory, a hard disk and a graphics adaptor. The colour on an EGA monitor is incredible, but you can certainly manage with a monochrome display. Also, better have a Roland MPU401 or compatible interface around or you won't get SampleVision to talk to your sampler.

Bear in mind that a generic program like SampleVision can't help you control the front panel of your sampler – you'll need a dedicated program for that. (Turtle Beach also have an editor specifically for the Akai S900 and for the Mirage.) What we're doing here is working with sound itself. SampleVision will let you send samples back and forth between different machines – it reads 8-, 12-, or 16-bit as well as Sound Designer file formats, and converts them all into its own file type. Unfortunately, it relies exclusively on MIDI for communication and doesn't offer the speed of a SCSI or RS422 protocol (for the few machines that offer it). It's a little frustrating to wait while SV (or any sample editor for that matter) sends your soundfile back to the sampler – only loop points can be updated quickly – though I'm told Turtle Beach should soon be offering a Digital Playback Port hardware add-on which will have an audio output. This preview capability will be a great asset.

Getting Started

TO GET A sense of how SampleVision works, let's go through a normal editing session. After SampleVision initialises your MIDI setup and you choose which samplers you want to work with, you'll arrive at the sample editing window. The user interface is based on the GEM model, which means that you'll be using icons, pull-down menus, scroll bars and windows to get around. With a mouse (optional but highly recommended) you won't have to mess with the keyboard at all, but if you like you can use *control* or *alt* key "shortcuts" for virtually all the program's functions.

From the Sample Edit screen, you get a sample to work with either by loading a file from disk or retrieving one from your sampler. If your sampler is capable of storing only a single sample (like the Akai S612), you'll use your hard drive as a soundfile "library" and keep all of your soundfiles there. If you want, you can load a second sample at this point, because SV has two Sample Buffers. A single mouse click moves you between the buffers, and you can easily transfer sounds from one to the other. You can also name the soundfiles in each buffer, which will help you remember which sample you're working on.

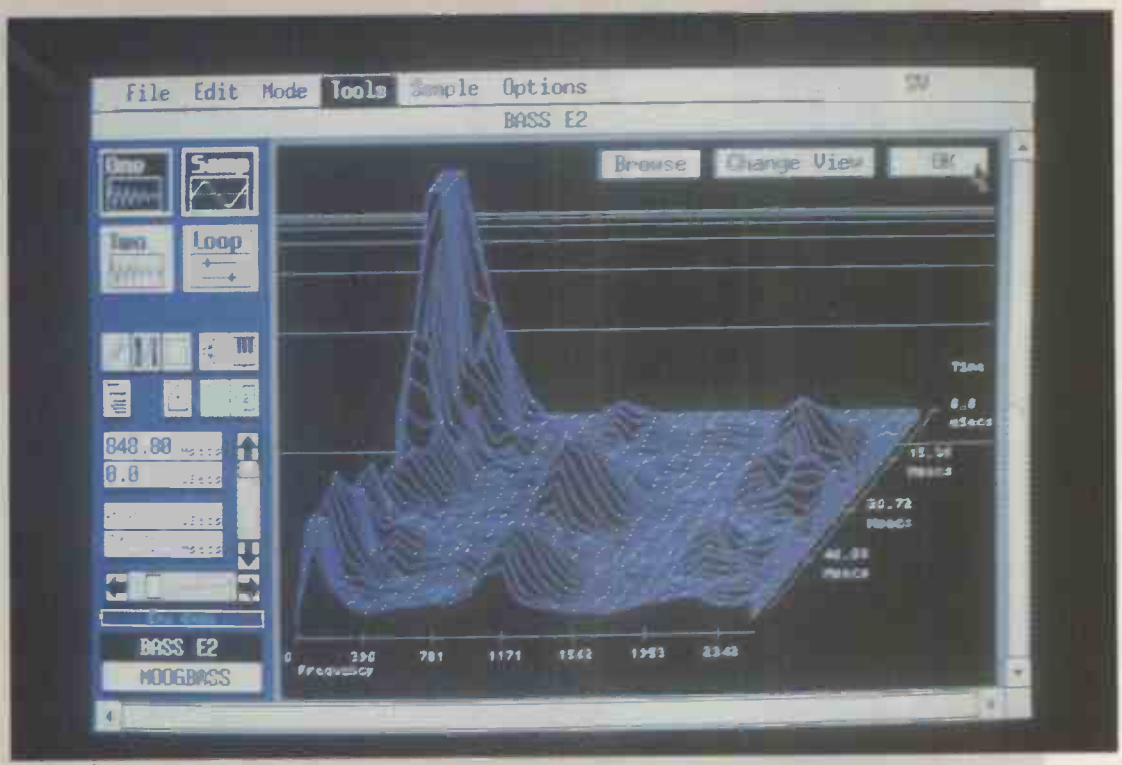
Depending on the resolution you choose and the size of your sample, you can see the entire soundfile displayed, or just a single two or three sample segment. SV lets you view and edit at a maximum resolution of 1/50,000th of a second, which is as good as almost any commercial program I know of. As for the big picture, you can work with a sample of about 2000Meg if you happen to have the disk space free. By the way, SampleVision is a "hard disk-based" system, not a RAM-based one, which means you're going to be able to readily access a lot more of your sound "at once" than you ever imagined. More on that later.

Editing

AT THIS POINT you're probably ready to fine tune your sound so you'll want to zoom in on a segment – by clicking on the mouse and holding it down while you drag it across the wave. I had better luck getting to the absolute start point of a sample by moving the mouse from left to right. Not a big deal by any means, but it's strange that you can't just start at zero and go out from there. From the pull-down Edit menu, you can choose to Cut, Trim, Paste, Mix Paste, Delete or Copy the segment you've selected. Unfortunately, SampleVision only has a single cut/copy buffer which can't be named; this won't be a problem unless you're trying to design a sound using pieces of many different samples.

Once you've part-tailored your sound, you can go into greater detail by working with the Tools menu. In this area you'll find a number of functions which will affect your entire soundfile, or only the range you choose in the Range Selection window, which opens up before any type of processing is done. Among the more self-explanatory features are Reverse, Invert, Mute, Fade and Scale. These features worked quickly enough on my XT, but when I ran the program on an AT, they really blazed. Speed is not much of a concern with these functions, but when you get into Frequency Analysis and such, a quick machine is a real asset.

Other tools in this menu are the Normalise function, which raises the volume of your sample as high as it can



FFT Display

without going through the ceiling, thereby increasing the signal-to-noise ratio of your sound, and Interpolate, which improves the resolution of your sound by taking an average of every consecutive pair of samples and adding it as a third sample to the pair. This increases the size of the soundfile by 50%, but really makes a noticeable difference, especially when you're using older, low-resolution sounds with a newer sampler.

Frequency Games

NEXT IN LINE is the Digital Equaliser, which gives you six filters to work with – High Pass, Low Shelf, Notch, Band Pass, High Shelf and Low Pass. Each of these can be set for a centre frequency, bandwidth and gain. SampleVision tells you what the upper limit of your centre frequency will be by calculating the Nyquist point – half the sample rate. The program itself can't EQ samples higher than 10kHz. If the equalising isn't to your liking, you can select Undo and start over.

In addition to creating a striking visual display which the manual tells us "will greatly impress our friends," Frequency Analysis (FFT – Fast Fourier Transform frequency analysis) has several practical uses. First, you can make an educated guess about a successful loop point if you locate the spot where all the attack harmonics have died down. Next, you might notice certain frequencies that you want to filter out of your sample, or you could check the FFT to see whether you are sampling at a higher rate than you need – if you could re-sample at a lower rate you'd save an awful lot of memory.

In the FFT window you first determine the range to be analysed and then set the time slice measurement of your display. You can then control scaling, direction, plotting of time, frequency, change "analysis mode", and if you're working in colour, alter the settings for the display.

If you want to zoom in on a spot, you just reset the selected range –you might request a larger number of time slices at the same time. Mercifully, SV has stored the FFT and doesn't have to recalculate the whole thing (normally, a very time-consuming process). This feature will be a real timesaver. Also, because you're working with a hard disk-based program, you could actually get an analysis of an entire 2000Meg sample (2000Meg drive not included). Many current sample editors limit you to available RAM or floppy disk space.

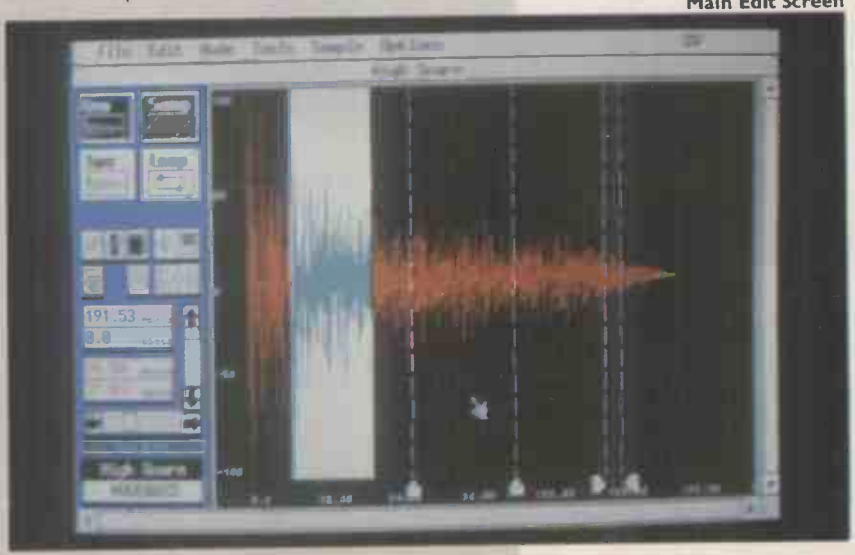
Another welcome feature of the FFT window is the Browse Button which, as far as I know, is not found on any other program. The Browse function allows you to see the frequency content of each individual time slice displayed as a bar or line graph – sort of like a real-time spectral analyser. You can "animate" the spectrum by moving the mouse back and forth or just click on the spot you want to see.

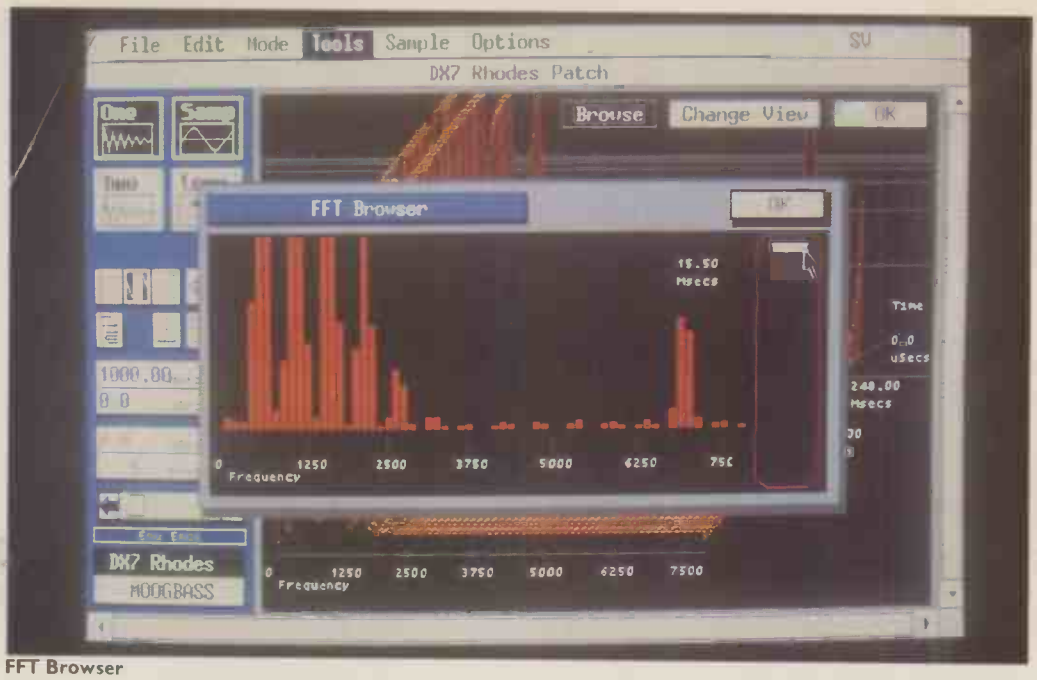
Looping

WELL, THIS IS what we've all been waiting for. SampleVision has several unique features which can make looping a lot less time-consuming. Clearly, this is one of the main advantages of any software-based editing program.

Before I cover some of them, let me talk a little bit about navigation. SV lets you set and name eight position markers and two loop markers to help you keep your bearings as you zoom in and out of its numerous display modes. You can move from anywhere to a marker just by pressing the *alt* key and the number of the marker you want; the loop start and end markers are accessed with ▶

Main Edit Screen





FFT Browser

► *alt*– and *alt* = respectively. Your markers stay set even when a new sound is loaded, but you can reset them quickly with the Clear All Markers menu.

To begin looping a sample you'll probably set the loop markers in the sample edit window at a relatively "stable" phase in the sound (where the amplitude level is fairly flat), and then get a better view of the sample by moving over to SV's Frequency Analysis area. From here you move to the Loop Editor. If you've miscalculated and set your loop markers out of the range of your particular sampler, you'll get an error message in this window and none of the editing functions will work. If all is well, you can work with up to eight loop points which will be displayed at the top of the window.

"The Animate function creates an oscilloscope-like display on the screen by continuously re-plotting a single cycle throughout the entire soundfile."

The screen at this point is split into two, representing the start and end points of the loop. Underneath the window you see a set of Match ⇨ icons which will automatically search forward or backward for points that are within five percent of the values of your loop start or end points. This will help determine a good "zero crossing" (a point at which the beginning and end points of the loop have identical amplitudes), a minimum requirement for good looping. You can also get different views of the wave from this vantage point to find good matches in timbre. SampleVision lets you preview the sound of your loop by clicking on a little quaver icon in the corner of the screen. When you're in the loop editor, the loop settings in your sampler are instantly updated every time you change them on the screen.

SampleVision has a number of other useful tools for creating good loops. Most important are Crossfade Loop and Animate functions. Crossfade is a fairly common feature which takes data from the start and end points of the loop and mixes them together. This gives a smoother transition from one side of the loop point to the other and can help eliminate glitches. The Animate function, something I haven't seen elsewhere, creates a moving, oscilloscope-like display on the screen by continuously re-plotting a single cycle throughout the entire soundfile. This is another way to spot where the attack portion of the sound has ended and the harmonics are dying out. But remember that not even SampleVision, which has some of the best looping facilities around, can guarantee you a smooth loop. With a complex, constantly changing orchestral timbre, it's probably not going to happen. Better know when to give up . . .

Now that we've covered the major areas of the program, let's move on to two other handy features. One is the Draw mode which, if you're working at a high enough resolution, turns your cursor into a pencil. If you want to "touch up" glitches in your sample, you can click on the mouse and get straight down to it. I found that using the Crossfade function occasionally left a few rough spots which I wanted to eliminate. I could have removed them with the delete function, but I had more fun redrawing the wave with the pencil. If you're so inclined, you might try expressing your artistic inclinations by designing your own waves – just Mute an existing sample, sharpen your mouse, and save your work as a new file. With a little luck, you could come up with some really useful waveforms.

Finally, there is the onboard sequencer, which lets you record and playback a couple of hundred notes for seeing how your sample sounds in a musical context once you've blasted it down to your sampler.

Verdict

IF YOU'RE SERIOUS about sampling and don't plan to trade in your IBM in the near future, you'll be happy to learn that nearly all the high-end wave-editing features that you've been reading about are now available with SampleVision. The program gives you extensive editing features to work with – Fade, Scale, Reverse, Invert, Mix, Merge and so on – and allows you to do an awful lot of signal processing as well. In addition, it gives you some new functions which no program for any computer currently offers like Animate and Browse. And because it is a hard disk-based system, you can hold an extremely large soundfile in memory. Its features work as advertised; I had no trouble getting the program to do exactly what I wanted, and somehow I had the feeling that somebody who really understood the sampling process had set the program up to work in a logical and consistent way. SampleVision meets the competition head-on and, at long last, brings state-of-the-art sample editing to the IBM. ■

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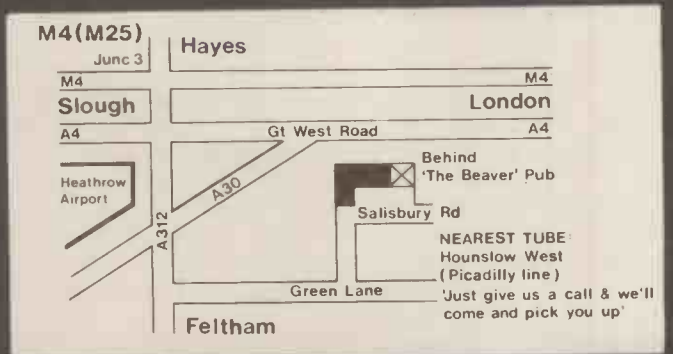

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CALL OF THE WILD

From the days of the first Shriekback recordings Barry Andrews has steered the band on a delicate course between inspiration and chaos; now he says it's time for a change. Interview by David Bradwell.

BARRY ANDREWS LOOKS up from the steering wheel of his ageing Ford Fiesta and reveals that the next Shriekback album is to be their last. *Go Bang!* (released on Island at the end of last year) was a turning point for ex-XTC keyboardsman Andrews and his band: it was their first album to be produced exclusively by a third party, namely Richard James Burgess, and the end of an era in British pop innovation.

Shriekback have never been easy to categorise. When Arista released the debut Shriekback long player, *Tench* in 1981 (complete with Neneh Cherry on backing vocals), the band's music was perceived as a mixture of hard funk and ambient grace. By the release of *Oil And Gold* in 1985 they seemed poised to achieve huge commercial success, borne out by college and dance chart success in America of the single 'Nemesis'. Such success was to elude them, however, even after receiving further critical acclaim for the follow-up long-player *Big Night Music* (on Island Records). When vocalist/guitarist Carl Marsh and bass player Dave Allen departed, Andrews was left the sole surviving founder member and for him it's almost time to try something new. But first he has to oversee Shriekback's swansong, a rework of some of their older material. During the recording of *Go Bang!* Andrews had found himself spending long periods of time in silent contemplation. It seemed to be the right time to fold Shriekback, to investigate new areas of music, and accept the challenge a new direction would offer. As a parting gesture, the decision was taken to release a retrospective compilation album of early material.

"The idea is to take things that people might remember from the golden days, stuff that never really had a fair crack of the whip, or which was produced in a way that meant it would never get played in clubs or on mainstream radio, and try to do a big, noisy, brash, extrovert Shriekback dance record. It will be completely re-recorded, using very extreme sounds – in no sense a conventional album. I haven't got a clue what it's going to sound like. I suppose I hope to find some rhythmic common denominator between contemporary dance stuff and the Shriekback song in question and find some place where they can interact. Then I'm just going to let imagination and technology run riot over the top and see what happens. I'm going to approach all this new equipment with perhaps the same degree of irreverance and experiment that we used on tape machines and fuzzboxes when we were doing *Care*."

Andrews puts the loss of the Shriekback spirit into perspective with the recording of *Go Bang!*.

"Just prior to recording the album we did a huge tour of North America and Australasia", he recalls. "Looking back, we did some brilliant gigs, but then it started to get on our collective wick. We were touring, touring, touring and there was no sense of our career actually going up a notch. It seemed a kind of mindless activity that the agents and management were getting rich but we in the band were staying where we started. Touring in moderation is quite educational, but taken to that extreme I find I get very uncentred and disconnected. I just become a sort of party animal, which is alright up to a point, but you soon want a bit more quality in your life. Then Dave said that he'd had enough.

"Quite apart from anything else he wasn't happy with the direction the music was taking. We committed to do one more album, which was *Go Bang!*. I wanted to make a more MIDI/technology-based record which was smart and modern sounding, but Dave wasn't really musically capable of doing that, and certainly ideologically would not have been happy with it. In the end Dave went off to form a band called King Swamp with Steve Halliwell while we went to Nassau with Richard Burgess."

Anyone familiar with Shriekback's music will recognise that the band's own production was an important aspect of it. Their decision to bring in an outside producer, therefore, comes as something of a surprise. Andrews explains:

"Every record company we've ever been signed to has tried to persuade us to get a proper producer. We thought that maybe we ought to get someone in to see what would happen. Burgess seemed like he was a man who knew how to make a dance groove work and make quite hard-sounding records which could nevertheless get played on the radio.

"It worked out pretty well, it certainly came in on course. But I found it a bit depressing because back in the early days there was a Shriekback collective decision that we were not going to take any shit from the record company, and we were just going to do what *we* wanted. If that was backward tape loops with somebody grunting in Italian over the top then so be it, and some of the great stuff that people hark back to in reviews came from that attitude. We were taking hardly any money, and that is realistically the only way you can achieve that degree of independence. Burgess, to his credit, took complete control in the studio and I thought I was being underemployed. The reason I do this is because it excites me. I like to find out things, to get out there on the cutting edge of what is possible. I can remember being absolutely petrified in the studio when we were doing *Care* in 1982 because we only had 19 days to record it and all we went in with was a few reels of blank tape. *Go Bang!* didn't have one moment of fear, it was utterly predictable from beginning to end and I think that's the kind of lack of excitement people identify."

ARRIVING AT ANDREWS' Dorset farmhouse studio, we are confronted by some of the new equipment Andrews intends to employ in the final Shriekback project. An Akai S1000 sampler, ASQ10 sequencer and Alesis HR16 drum machine have only been here three days, and he is still wading

through the instruction manuals. His previous setup revolved around a MIDI retrofitted Jupiter 8, Korg DSS1, Yamaha TX81Z and Korg DDD5. He opted for the ASQ10 rather than a software sequencer because he prefers to keep things within self-contained boxes. His other hi-tech purchases seem to depend upon the personality of the equipment in question.

"With the sampler it was as though I was choosing a car. I didn't care what it was, and as long as it performes a function and doesn't give me any trouble, I'm happy . There are other things where I look specifically for a certain character. The Alesis HR16 has got a real attitude. The '60s kick drum, the piccolo and the rosewood claves have a real feeling of 'Yeah, what are you going to use here, that's a hard sound, whack it in'. It's off the peg, you can't muck around with it, and it doesn't keep you hanging about. The S1000 is a pure piece of technology and it seems that they've thought of everything.

"I'm quite superstitious about technology. There's a way that you can be with equipment where it works, and another where it fucks up all the time. I think electronic machines are very responsive to the power of intention in one. Quite often I'll be loading a sample and I think it'll be alright so I'll go and make a cup of tea. And then when I come back it hasn't loaded properly, whereas if I had sat down and watched it, it would have. Don't ask me why, but it happens too many times to be accidental. I definitely like to make friends with my machines. I've had keyboards in the past that I just haven't loved, and if you don't love them they're always going to go wrong. Like that TX81Z, I don't love it at all, I don't care about it. It's got a couple of good sounds, but it doesn't bring me any joy at all to work with it."

Andrews is far from new to the wonders of technology. Having begun his professional career in music with a piano (which he describes as the first keyboard instrument he ever misused), he bought a Crumar Group 49 organ the year before he joined XTC. Whilst hopelessly out of date by modern standards, back in the late '70s it was a desirable, if somewhat unreliable piece of equipment.

"The organ used to break down on stage and two roadies would have to get amongst it with screwdrivers. There was a kind of performance element to that which I rather liked, and you could also bend the oscillators because they were stuck in little bits of wax. I did manage to squeeze quite a lot of expression out of it really, considering it only had about three sounds, and they were all rancid. But it had a manic edge to it which I liked. I felt that I wanted to go beyond that, but all the keyboards that were coming out were synths like the Minimoog which all had one bloody note. Then I went along to Argents one day and there was the Jupiter 8 and the Memorymoog and they were the first generation of big polyphonic synthesisers, that cost a few bob but did quite a lot. I played the Jupiter and fell in love with it immediately because it was everything I wanted. It was a piano in terms of ►

"We were touring, touring, touring – it seemed the agents and management were getting rich but we in the band were staying where we started."

"I like to make friends with my machines – I've had keyboards that I just haven't loved, and if you don't love them they're always going to go wrong."

how many notes you could play, but it was combined with an enormous breadth of sound. I was interested in being an orchestral composer before rock'n'roll led me off up its primrose path, and I'd always wanted those forces at my disposal. Suddenly it seemed that they were there and it was really really exciting. I remember thinking the Memorymoog was pretty good as well but that had fake wood on the side and I despised that!"

The early Shriekback albums were characterised by their atmosphere of experimentation. Although the band's finances were limited, they tried their best to keep abreast of new breakthroughs in technology. Tape loops were one early trademark, and as expected, Andrews welcomed the modern equivalent, the sampler, with great enthusiasm.

"There's nothing radical about samplers in terms of what you can achieve, but they are radical in the sense that you can achieve it a lot quicker. For instance, if you want to record a backwards tubular bell, then instead of having to hire a tubular bell, mike it up, record it, turn the tape over, re-record it and spending three or four hours to find out if it's going to work, you can just slap a sample in, reverse it and play it wherever you want. It doesn't mean that it's stopped people being inventive, it's possible to be more inventive now because you have so much more time and freedom. The Beatles weren't sitting around saying 'We can't do that, Chuck Berry wouldn't have done that', they were interested in finding out all the possibilities of what was available and so am I."

ANDREWS APPEARS TO be looking forward to the task of producing the final album with relish. While his current working method is more about reading owner's manuals than genuine innovation, he can see the germs of new ideas already developing.

"I always think it's exciting when you get a new piece of equipment or a new person to work with because, although it always seems like the first movements you make are elementary and obviously not in themselves the finished product, there is always a kind of energy that guides you towards certain things. Then when you look back in six months time when the project's over, you find that hidden within the first few things you tried were the germs of everything that developed into the final project. At the moment I'm just sitting back and watching myself really and trying to pick up the clues as I go along.

"I suppose it's much more a laboratory kind of thing now. If this was a band you would have other people and their vibes and you could bounce ideas between each other. In here I've got no excuses, it's just some equipment and, if I can work out how to use it, it will do what I tell it. It's quite confrontational – you can't get away from the fact that it's you on your own, but I find it a challenge.

"After *Go Bang!* I really wanted a challenge and just learning to work this stuff is a major problem. I suppose I've also always had to deal with technology through intermediaries in the past and a succession of engineers, some of which have been great, others which have been really awful, but always there's been this kind of frustration on my part. Sometimes you hear an engineer get a drum sound and if you could take that as a starting point and work back from it, it might be possible to get a whole new perspective on recording drums – even to get a novel and unconventional way of looking at drum sounds. But however great the communication is with the engineer, you can't explain it all and you have to realise that they've got a certain aesthetic which they think is good. Consequently I've got into the situation with engineers that I've really made my point on one or two things and they've asked me what I want them to do next and I don't know."

As for the future, Andrews is reluctant to say too much about which directions he will be pursuing. He has already received several film offers, and by way of a departure he recently provided the music for a show at the Battersea Arts Centre called *Requiem At Low Tide*.

"I did it with a dancer and it was utterly left field, determinedly uncommercial and it was a real good opening of the sluices. We flooded the Centre and had huge piles of rock in the middle. It was just like getting my feet back down on the ground a bit, and not disappearing into the more nebulous worlds of music business budgets and music business bullshit. One was aware when one was doing it that 80% of it was crap, but if you get that 20% that you wouldn't have even thought of if you hadn't attempted that massive range of stuff, then it's worth doing. I felt it wasn't a complete artistic success but there was an atmosphere that came through it, a kind of cold dark beauty that I was really pleased with."

Despite never attaining their deserved level of commercial success, the whole Shriekback project has been seen as immensely satisfactory by all concerned, with the possible exception of the record companies concerned. To predict what may come next would be doing Andrews a great disservice, but whatever he decides for the future, he has no regrets about the past.

"It's been an incredible project really. When me, Dave and Carl came together we were in some studio and we didn't know our arse from a hole in the ground. We were just there bluffing it. I had loads of things I wanted to do but I didn't know how to do them. We all learned together and we all grew together, and it was very much a case of doing it in public as well, with our backgrounds in XTC and Gang of Four. I felt under incredible pressure sometimes to get it right and to get it right on my own terms without getting it right on anybody else's. I was hopelessly paranoid in those days. But now Dave's reached a point where he can go off and create a band from nothing except the general principles that we all learned together. Carl's done the same. Martyn is now a world class drummer, whereas when he came along to Shriekback he was a maintenance fitter at a hospital who played a bit of drums on the side.

"It seems like it's been an incredibly positive thing and we've left behind us some shit hot records, six great albums by anyone's standards and some great gigs, some really fiery passionate events.

"I think in any area of your life, but especially in art, you only find out what is going to happen next when you've killed the thing that happened before. You have to leave your last girlfriend to fall in love with somebody else."

Barry Andrews has done that, but the spirit of Shriekback remains. In whatever future form it manifests itself, the public stand to gain from the work of one of pop's true innovators. Let's hope it's sooner rather than later. ■

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ROLAND R880

Digital Reverb Unit

One of the benefits of digital technology is quality reverb at budget prices, but it has also made mid-price reverb units a very sophisticated proposition. Review by Vic Lennard.

WITHOUT A DOUBT reverb is the most important effect currently in use in a recording studio. It can make the difference between a good track and a *good* track, if you know what I mean. And with reverb, as with many other aspects of music, fashion has its place. Ask the purists and you'll be told that current reverb styles have too much top end – hence the inclusion of multi-band sweep EQ on many semi-pro units such as the REV7 and Roland SRV 2000.

For far too long now, the likes of Lexicon and AMS have ruled the roost when it has come to fully pro reverb units – with price tags to match – and while the bottom to mid end of the market has been more than catered for, there has been space for a machine with excellent sound quality at the right price. This appears to have arrived in the form of the Roland R880 and graphic controller GC8.

Description

THE R880 IS a two audio input, four audio output reverb unit with input A feeding outputs 1 and 2, and input B feeding outputs 3 and 4. Inputs and outputs appear as four different types of connectors, namely balanced cannon, unbalanced jack, coaxial digital (SPdif) and Roland's proprietary optical digital. The front panel has 12-segment input level LEDs for each channel, applicable only to analogue inputs, and channel 1-4 output metering of a

similar nature. A MIDI channel selector and display, and analogue input rotary are the only other front-panel controls. The rear panel houses the connectors, MIDI sockets (in/out), RRC DIN sockets (for connection to the GC8 remote control unit and daisy-chaining to other R880s) and a unigain switch for level matching (−20/+4 dBm).

Overview

AN R880 CONSISTS of two independent effects blocks, each of which has an audio input (A or B) and can select one of the various main effects modules – namely reverb, plate and non-linear – along with a mixture of secondary units chosen from equalisation, delay, compressor/gate mixer and chorus. The basis of an effect is an algorithm which sets up the units to be included within a block, including their interconnections and various unit levels. There are editable parameters for each unit.

The GC8 is a Graphic Controller capable of controlling all the functions of up to 16 R880s operating on different MIDI channels. The panel of this remote consists of five function keys with a shift button; four brown cursor keys for moving around the display and two white cursor keys for changing to upper and lower levels of pages; a numeric pad; four keys labelled Help, Control, Cancel and Enter; and five unlabelled multi-purpose rotaries. The 255×63 character display will show up to 99 internal memories and card memories (using D256/128 cards). The unit uses software booted up from a ROM card (allowing future improvements to be made).

Getting Around

THERE ARE FIVE main pages for Algorithm, Parameters, Mixers, Functions and Memories accessed by using "shift" and one of the five function buttons. Each has a menu down the right-hand side of the display whose headings can be chosen by further use of the function keys. Selections and alterations within a page are made by the use of the rotaries (for adjusting values) and the brown cursor buttons (for movement around the page). Different "levels" of editing are possible on most pages with the Upper level being used for rough setting of values and the Lower levels then being used for a higher degree of accuracy. Moving between levels is achieved by using the two white cursor keys on the keypad.

Memory (shift/func 5) lists the internal and card presets along with their input and output status (see later) and their names (up to 16 characters). Int/card and patch number can be selected by scrolling the left-hand two rotaries, and patches can be read into memory, copied from one location to another, named, deleted and initialised. The entire card can also be backed up.

Function (shift/func 4) controls the MIDI program change table, checks connections to multiple R880s, allows the clock to be changed and accesses the digital interface data from the R880 including user setting of emphasis.

Algorithm (shift/func 1) brings us to the heart of the machine. Each block can use one principal type of effect with a choice of Reverb or Plate with stack (RS or PS) for room or hall and tap (RT or PT) for synthesising deeper settings or Non-Linear Reverb (NL) for more original creations. The second block also offers you "sync" for matching its settings up to those of the first block. If either Reverb or Plate are selected, you may also incorporate one of two gate effects (A or B) into part of the pre-effect with the reverb output while the other uses post effect, the choice of which depends on the situation. Choices are made by using the cursor keys for movement around the display and the rotaries for selection. The only other choice available for the main effect is the number of inputs and outputs:

TABLE A

Selection	Input	Output
1-2	Channels A, B Mixed	Outputs 1/3 and 2/4
1-4	Channels A, B Mixed	Outputs independent
2-2	Inputs independent	Outputs 1/3 and 2/4
2-4	Inputs independent	Outputs independent

All this information, along with a graphic diagram showing the setup for the main effects for each block is shown in the upper part of the algorithm page, and any changes are followed by the prompt "Warning Transmit? (Yes:Control, No:Cancel)", which gives you the choice of continuing without sending the edit to the R880 or being able to hear the effect of the last edit.

The lower half of the algorithm page presents what can probably best be described as a maze-builder's paradise. Option 2 on the menu, which is called Joint, is the flow diagram for the patch showing channels A and B at the left-hand side, outputs 1-4 on the right-hand side and the connections between the various units used in between. This page has four choices on the left hand side – Joint, Break, Clear and Transmit. The first two options allow interconnections to be either made or broken. Clear breaks all connections (without the ability to restore them), while Transmit sends any alterations to the R880. Option 1 on the algorithm menu is the Move option which displays the modules used in the present patch inside a rectangle (a "workbench"), with unused modules to the left, a large cursor above these and the word Clear beneath the workbench. Moving the cursor to any of the modules and pressing "enter" picks that module up and allows it to be moved to any page where it can be released. The Clear icon does precisely what it purports to – it clears the workbench and places all modules to the left.

To create an algorithm from scratch, select the main module and then move to the lower level and clear the workbench. Certain rules have to be followed, some due to the limitations of the machine and others to end up with an acceptable result. The number of inputs and outputs vary with the type of module – for instance, an early reflection unit has one input and three outputs, the centre one of which bypasses the early reflection effect, while a reverb module has two inputs and two outputs for stereo. Many of the units have only one input (although most of them can have as many outputs as necessary) and so a mixer module will be needed if outputs from two units are to be sent to a module with only a single input. Also there will always be an early reflection unit preceding the main effect if it's a reverb module, and any main unit is always preceded by an equalisation module –while these are not actual "rules", they are necessary if a decent result is to be obtained, and all the presets adhere to them. Certain laws do exist which you become aware of when attempting to edit an algorithm; compressor and gate share the same unit, so that if a reverb is used with a gate characteristic, the compressor module will disappear; compressors require an integral mixer as do gates in mode B, so causing the disappearance of one from the left-hand side of the workbench. Custom algorithms are tricky and require time to experiment. Fortunately, many of the presets can be used as templates.

Parameter (shift/func 2) allows editing of all modules used within a patch along with the delay and chorus units ▶

► and any others on the workbench such as compressor or gate. The principal parameters for the main unit and its counterpart appear on the upper level of the page and vary subject to the type of main module:

TABLE B

Main Module	Parameters
Reverb	Type (Room, if stack, additionally Garage if tap), Size, Reverb time, Early Reflection level, Brightness.
Plate	Type (1-4), Reverb time, Brightness.
Non-Linear	Form (1-3), Pre-delay, Gate time, Reverb time.

The type of plate reverb appears to affect the tonal quality while the form of the non-linear reverb changes the shape of the envelope.

Editing any of the upper level parameters by use of the rotaries and cursor movement keys causes a function called auto-calculation to come into effect. For instance, reverb has three other lower pages of parameters for reverb (Type, Size, Pre-delay, Reverb Time, Density, Low/High Damping/Frequency), sub-reverb (Pre-delay, Level) and early reflection (Form, Pre-delay, Density and a three-point envelope on one page followed by the number of reflections, delay and level on a second page) whose parameters will be altered by changing those on the upper level. Getting lost by moving through the various pages is prevented in two ways; the menu cards on the right-hand side "stack up" to show the depth of editing and a key labelled Help graphically displays the various edit pages, as well as showing which pages have already been altered. The upper level of parameters also have a visual side to them, with Type and Size shown as a three-dimensional block, Reverb Time and Early Reflection level in a graph and Brightness by a slider, all of which change as parameters are altered. Lower levels of parameters are also displayed graphically.

An example would be to consider which lower level parameters are changed by altering the upper level ones, for, say, a main module of reverb:

TABLE C

Upper level Alteration	Reverb Changes	Early Reflection Changes
Type	Type, pre-delay, density, low freq.	Form, delay, level
Size	Size, pre-delay, density.	Density, pre-delay, envelope level 3 and times 1-3, delay, level.
Reverb time	Reverb time	Envelope times 3,4
ER Level	No changes	Envelope levels 1-3
Brightness	High damping/freq.	No changes.

Additionally, the two sub-reverb parameters change with each upper level alteration meaning that between 4 and 13 lower level parameters change each time.

Editing parameters while listening to the results is quite a strange experience because, while it's acceptable to change any of the lower level parameters real-time, any alterations to the upper level ones brings up the "Warning" sign as changes at this level affect many other parameters as seen above. Pressing Control to send these changes to the R880 takes enough time for there to be an audible difference - effectively a glitch. This would seem to make real-time editing during a mix impractical.

The depth of parameters on the R880 is quite astonishing - two modules each of a three-band peak/shelving equaliser (whose display alters according to the frequencies as on the E660), chorus unit with Pre-delay, Rate, Depth and Phase, delay unit with Delay Time and Feedback, gate with Threshold Level, Attack and Release and finally, compressor with three threshold levels and ratios, Limit Level, Attack and Release.

Mixer (shift/func 3) has three menu choices; Input level for setting the analogue and digital gain (remember that the rotary input control on the R880 only affects the analogue input); Output level for setting analogue and digital output and Internal Mixer level for adjusting the input and output levels for each of the mixer modules used in the patch. The first two selections are adjusted at the upper level in integers but can be both displayed on the same page by switching to the lower level where changes may be made accurate to one decimal place.

Selecting internal mixer takes a moment to bring the display of the present algorithm into view with input A in the top left-hand corner being shaded in. Pressing Control brings up a box showing the analogue and digital input levels for channel A in number and as a graphical block and disappears upon a second press of the same button. Leaving the box on screen and using the movement cursor keys allows access to all mixer modules and displays each of the two input levels along with the output in a similar manner to the previous example with alterations possible via the rotary controls. Moving to the lower level displays all of the parameters for the mixers in two pages so removing the necessity of movement around the algorithm.

In Use

THE SOUND QUALITY of the R880 is its strongest feature: true stereo, it's an absolute delight to listen to. Its user-friendliness, however, is not such a delight. Any major alterations to the preset sounds can rarely be heard when the edit is taking place as they have to be sent from the GC8 to the R880. Building an algorithm from scratch is also likely to present problems to all but the most technical of users.

The idea of using RAM cards to store patches on is a good one, but as it takes around two seconds to load a patch into the R880, it's not practical to make MIDI patch changes during mixdown. I tried but could not get the R880 to dump the parameters of a patch via System Exclusive as an alternative.

Verdict

AT THE PRICE, there's nothing to touch the R880 in terms of its sound quality and facilities. Lack of ease of programming will mean that many users will be dependent on presets and it would be nice if Roland brought out a library of settings which could then be mildly altered to suit particular uses. Still, time spent learning the intricacies of the GC8/R880 is time well spent as practically any conceivable effect can be obtained from this magic black box. ■

Prices *R880. £2100; GC8. £528. Both prices include VAT.*

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SOUNDSCAPE COMPETITION

YOU ARE TOMORROW'S most in-demand hi-tech composer, right? If only someone would give you the opportunity to work in a half-decent studio you could learn your way around the gear, knock out a handful of impressive pieces of music and the work would just roll in. Now where's that lucky break . . .

Well, it could be in your hands at this very moment. No, we can't promise you instant fame and fortune but we do have a place on the Soundscape Contemporary Music and Technology Forum to give away in this exclusive Music Technology competition. The course – worth £375 to paying students – is being run by the University of East Anglia in conjunction with The Composers' Foundation and is sponsored by Yamaha who have generously provided much hi-tech equipment for the occasion. As the University is located out in Norwich, the course is residential – so no early-morning rushes to get to the five days of lectures and hands-on sessions that will cover such topics as synth programming; sampling; guitar, wind and drum MIDI controllers; acoustics; composition (for a wide variety of applications); building an electronic music facility; video synchronisation; desktop music publishing; music in education; how to sell your music and (as they say in the best commercials) much, much more. The lecturers that will host Soundscape are too many to mention by name (sorry, guys) but will include Yamaha's ace synth programmer and developer Dave Bristow, TV and film composer Roger Jackson, keyboardsman Adrian Lee (currently working with Mike and the Mechanics), leading TV sound engineer Dennis Weinreich (who supervised the NBC TV coverage of Michael Jackson's recent European tour), MIDI guitar tutor Steve Smith, Steinberg and C-Lab software experts and a "mystery star tutor". Needless to say, all are expert in their field and will share their secrets with you. Soundscape will run from Saturday, August 26 to Wednesday August 30th.

NOW, THE MOMENT you've all been waiting for: how to enter. What we need from you is a piece of music. It must not be longer than ten minutes, but may contain excerpts from several of your compositions. The composition should be original and should be

accompanied by a statement of your musical objectives and aspirations; this must not exceed a single A4 page and should preferably be typed for clarity. The judging panel will be drawn from the Soundscape tutors who will be looking principally for *creative* use of sound. Now you can put your music where your mouth is.

ALL ENTRIES MUST be accompanied by an entry form (no photocopies please) to arrive not later than **14th April 1989** at the following address: ***"Soundscape Competition"*, Music Technology, Alexander House, Forehill, Ely, Cambridgeshire CB7 4AF.** Cassettes and details should be clearly and individually marked with your name and address. Please note that cassettes will NOT be returned so please do not send original recordings. (Receipt of entry will be confirmed if an SAE is enclosed with your entry, a second SAE will ensure prompt notification of competition results.) Employees of Music Maker Publications are ineligible for entry. The judges decision is final and no correspondence can be entered into.

Further information on the Soundscape forum can be obtained from Mrs J Thorp, Soundscape, Vice Chancellor's Office, UEA, Norwich NR4 7TJ. Tel: (0603) 592802. Thanks to Soundscape director Mike Steer for many hours spent on the telephone organising this competition.

ENTRY FORM

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What best describes your general position in music?

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FOSTEX R8

Eight-track reel-to-reel recorder

Fostex' latest 8-track recorder incorporates a novel approach to remote operation, but how stiff is competition from the new cassette machines? Review by Vic Lennard.

THE R8 FOLLOWS on in the format that Fostex themselves established some years ago with their A8 and subsequently followed up with the A80, M8 and E8 machines. In fact, no other company has challenged Fostex for this particular market position: 8-tracks on ¼" tape. But even without competition they have continued to improve their machines both in terms of facilities and quality. So, how does this recorder match up to its predecessors?

Description

THE R8 RECORDS eight tracks onto ¼" tape at a speed of 15ips (+/– 10% via a pitch controller) utilising the Dolby C system for noise reduction. The facility of switching this off on track eight for tape sync purposes has been omitted but, in my experience, this particular type of noise reduction does not tend to affect a sync code. Inputs and outputs are via phono jacks and there is a synchroniser connector for the Fostex 4030 and a serial port for the future use of a Model MTC1 MIDI time code controller.

The revolutionary aspect of the R8 is that the whole of the front panel is removable hence creating the perfect remote control unit (which can be moved upto 5 metres away from the machine by use of a special extension cable). Once removed, the basic transport controls are duplicated on the main body of the recorder.

Recording Techniques

ON POWER UP the word "Fostex" scrolls across the seven-segment bar graph display. Thread the tape and away we go.

The control panel has no less than 15 indication LEDs onboard and two time displays, one named Tape Time, which displays the current tape location in hours, minutes and seconds unless being used for a special purpose (which we'll call window 1), and the other called Memory, which displays assorted data dependent on the function (which we'll call window 2).

The first track to be recorded is probably going to be for synchronising to a sequencer. It is customary to use an edge track, so let's settle for track 8. Press Safe/Rdy and a small "t" appears to the left-hand side of window 2 asking which track is to be set to Record mode Select the track number from the numeric key pad and it will be displayed on the right-hand side of the window – a mistake can be cancelled by pressing Clr (clear) and repeating the procedure.

The rest of the recording process is very similar to this (unless you're not using a sync track) except that there is an easier method for putting more than one track into Record Ready mode: after pressing SAFE/RDY, key in the range of tracks to be recorded on. For instance, simultaneous recording on tracks 1 to 4 would be keyed in as "1-4".

Punching in and out is often a cliffhanger of a situation and involves the changing of the monitoring from tape to input at the point of the punch. A rehearsal mode is a useful facility and an automated rehearsal mode is even more desirable. The R8 has the unautomated variety in the form of a footswitch plugged into the Punch In/Out socket on the side of the remote. Select the track(s) to be dropped in on as before and step on the footswitch while holding the Record button down, and an amber LED above it will flash, showing that the machine is in Rehearsal mode. Alternate depressing of the footswitch will toggle the monitoring between tape and input. To carry out the actual punch in, either press the Record button or step on the footswitch at the relevant moment. Some people are bound to claim that this removes the flexibility of putting a recorder into Record mode and then simply depressing the track safe button at the punch point, but this procedure is far safer and more likely to give accurate results. I like it.

Memories and Autolocation

THE R8 HAS ten memory locations which can be set "on the fly" or while the tape is stationary. If the memory time is known, it's a simple matter of clearing the display of window 2, inputting the time with the keypad, storing it and finally selecting the memory location. If a time is to be picked off of the tape as it is moving, pressing Hold will transfer the currently displayed time from window 1 onto window 2.

A memory can be recalled by pressing Rcl followed by the memory number. The memory time will now appear in window 2, and the Locate function will automatically wind the tape to that memory setting if depressed (even in Record mode). If the play key is selected while the location is being found the recorder will instantly play when it arrives at its destination. A neater way to do this is to use the Auto Play function which will put the machine into Play mode whenever the tape is rewound or fast forwarded.

Most remote controls allow the use of a shuttle facility to automatically rewind to a point when another location is reached. The R8 goes one better – you can shuttle between any two memory locations by selecting them in either order as the remote will put them into the correct time order. Clear window 2 and use the numeric keys to choose the two memory locations and then press Store followed by Auto Rtn. Rcl and Auto Rtn will show the only two memory locations that are presently memorised. An additional pre-roll feature allows the tape to run for a short amount of time before a memory point so that a short section of the music preceding that point can be heard. This can be set up to 9 seconds.

There is a second jack socket on the side of the remote labelled Play/Locate which allows you to cue the tape to a selected locator on the panel with the first depression and set the recorder into play with the second.

The R8 offers two methods of designating a length of tape outside of which the machine cannot be cued. Tape Reel Zone Limit sets up the boundaries for the start and end of the tape so allowing free rewinding and fast forwarding with no danger of running the tape out of the tape transport – especially useful on rewind when the song is the first one on the tape.

Cueing and Editing

PRESSING THE STOP key obviously halts the motion of tape and puts the recorder into Standby mode. Pressing the Stop key again transfers the R8 to Release mode (where the pinch wheel is retracted to a greater distance from the capstan) for easier editing.

A further aid to editing and cuing is the double operation of the Rewind and Fast Forward keys. Hold either of them down initially and the tape movement will be slow, release them and normal speed is attained. Alternatively, when already in fast wind, pressing either key will slow the tape down, making it easier to arrive at a particular cue point. Couple this with the ability to defeat the lifter mechanism (which usually keeps the tape away from the heads during fast winding) by depressing either of the fast motion keys and pressing Play once, which allows the signal on tape to be heard, and you have a very efficient editing system. One point to beware of: excessive use of this method of cuing is likely to increase wear of the heads.

Additional Functions

THE R8 HAS the ability to display all of the locators in order along with the last selected locator and the current tape position. Pressing Rcl and Clr brings up a display similar to the following;

6 3.2 L.1 4 C 5 9.8.7.0

the case of the "L.1", tells you that locator 1 is the current locator. Put the tape into motion and and "C" (Current position) will move around to show where it is presently situated.

Other additional facilities include a meter normal/fine switch which changes the marked scales on the bar graphs from a 28dB range to 7dB (which is particularly useful when setting the level for timecode); error messages which display various error conditions which can occur during the normal course of usage and Meter mode switches which change the display characteristics of the bar graphs.

Verdict

Recording quality is excellent – practically identical to the original signal monitored from a sequencer. Using edge tracks showed no audible sonic difference, and though crosstalk performance was perhaps slightly inferior to Fostex' own E16 (16 tracks on 1/2" tape), it is still good. When bouncing tracks, I found a little care is needed with levels when using adjacent tracks, but results overall are good. Generally, the machine is a joy to use.

In the light of the recent arrival of 8-track cassette machines (Toa's MR8T and Tascam's 238) the desirability of a reel-to-reel machine has to be brought into question. While a cassette machine is obviously smaller and more convenient, the width of the audio track and gap between adjacent tracks is significantly larger on a reel-to-reel, giving superior sonic performance by design. Reel-to-reel tape is also a better quality and more stable medium to work with than cassette tape. Finally, the alignment and care of the heads on an 8-track cassette system is so critically important as to make it difficult to work with – and while care of the reel-to-reel heads is also highly important, they are more tolerant of both wear and alignment.

The R8 is a very fine semi-professional 8-track recorder with practically every function imaginable on such a machine and with excellent audio quality. I want one. ■

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Photography *Adam Jones*

ROLAND RE3

Digital Space Echo

Once the industry standard tape echo, Roland's Space Echo has returned in digital form – but does a '70s echo have a place in the late '80s? Review by Gordon Reid.

WITH THE RELEASE of the RE3 Digital Space Echo it would seem that, on paper at least, Roland need their corporate heads testing. Bringing out an extremely limited echo-cum-effects unit in today's already crowded effects processor market place – especially at a price that exceeds many of the most feature-packed multi-effects systems currently available – hardly appears to be good business. The facilities offered by the Space Echo certainly do not compete with any of the powerful units now marketed by Yamaha and Alesis. Roland themselves out-specify the RE3 with their own DEP5. To understand why this strange state of affairs should exist let's go back in time . . .

Echoes of the Past

ROLAND ONCE PRODUCED a series of tape echo machines called "Space Echoes" – three free-standing units, the RE201, RE301 and top-of-the-line RE501 and a rack-mount version of the RE501, the RE555. Of these the RE201 was the nearest thing the industry has ever seen to an industry standard effects box. Although only a glorified tape recorder with multiple tape heads (like the WEM Copycat) and a three-spring reverb, the RE201 had 12 modes of operation (four echo, seven reverb/echo and one reverb) and every studio and every pro band had at least one. There were variable controls for repeat rate, echo intensity, echo volume and reverb volume. There were also bass and treble controls which acted only on the processed signal. The RE201 was arguably the most successful effects unit ever produced. But with the advent of digital effects with no wow and flutter, reduced noise and maintenance, and increased bandwidth and fidelity, the Space Echo was doomed. The RE201 was eventually phased out in 1985 but demand for the RE-series continued and secondhand (tenth-hand?) units still change hands today for £200-300.

So Roland returned to the drawing board to produce a digital version of the Space Echo (warts and all). The result is the RE3 Digital Space Echo, which is claimed to have all the fundamental characteristics of the original. Indeed, so closely have Roland adhered to the original concept that not one additional facility (other than memories and MIDI of course) is available on the RE3 compared to its predecessors. Trying to recreate the sound of genuinely obsolete technology seems like a retrograde step (digital version of the Mellotron anyone?) but the RE3 has been in the stores for a little while now, so how does '80s technology carry '70s design philosophy?

Description

THE RE3 IS a wholly digital signal processor combining a range of echo effects with a simple reverb generator and a simple chorus effect. The A/D and D/A converters are 16-

bit but the sampling frequency is only 32kHz giving a treated signal frequency response of 20Hz-12kHz. (The untreated part of the signal is quoted as 10Hz-30kHz and is, for all purposes, unaffected.) Delay time is severely limited by today's standards at only 300ms, and the reverb has only one parameter, which Roland call Depth. This varies the reverb time between 0 and 5 seconds. The final effect is called Warmth and, although the name suggests some kind of EQ (tone) control, this actually adds an LFO-contolled pitch modulated component to the treated signal. Unlike genuine modular systems, the order in which the effects are applied to the signal is fixed. Input is mono only but the processed signal is output in stereo.

Physically the RE3 is yet another example of the charmless school of black 1U-high 19" rack-mount units. Construction is to Roland's usual high standard and the unit feels sturdy enough for sustained road use as well as studio installations. At the back of the RE3 you'll find the (mono) audio line-in socket and impedance matching switch. Only two options are available here, +4dB for studio use and −20dB for most stage equipment. Unfortunately, there is no input gain control and to obtain a satisfactory input level requires adjustment of the output control of the synth, auxiliary send or whatever. Nevertheless, although inconvenient, I encountered no matching problems during the course of this review. Next along the rear panel is a direct signal mute (switches between mixed signal and echo for stage use, and echo only for use with mixers) and the stereo audio outputs. As usual with Roland equipment, the left audio output doubles as mono if no jack is inserted into the right-hand socket. Also on the rear panel is a socket for an effect on/off pedal for stage use, and finally a standard MIDI In socket. Unfortunately there is no MIDI Thru - a sad omission. If you're still in the habit of chaining MIDI devices (who isn't?) the RE3 has to be last in the chain. (Many early pieces of MIDI gear also lack MIDI Thru and if there's already one of those at the end of the chain you'll have no choice but to buy a MIDI Thru box, adding another £30 or more to the price of using the RE3.) Another complaint concerns the mains lead, which is of the infuriating, permanently-connected variety. This is quite unnecessary, and a real pain.

The front panel is, however, a joy to behold - there are knobs on it. Seven to be precise, controlling all aspects of the unit's performance. Viewed from left to right these are: two microphone sockets with independent level controls, five parameter control knobs, an LED input level indicator, 10-character LED, four parameter access buttons (oh well, it couldn't last) and, of course, a mains on/off switch. The five echo control knobs are probably the simplest yet seen on a digital multi-effects device. They are: Echo Level and Echo Rate controls, Echo Intensity (which increases or decreases the number of repeats in the treated signal), Reverb Control (increasing the depth of reverb) and Warmth. The only independent control over Warmth is the depth of the sweep; the sweep rate is always proportional to the echo repeat rate.

On the right of the front panel the screen normally shows the current mode and memory selected (see below) but when a parameter knob is turned the screen changes for a few seconds to show the parameter name and currently selected value. The four button controls are used to change mode, change memory selected, write to memory, and control MIDI. Only two buttons have dual functions - the mode and memory buttons act as increment/decrement controls for MIDI control.

"Learning to use the system is very simple - unlike many of today's machines, you don't get the feeling that you'll never get the best from it."

Modes and Memories

IF THE ECHO, Reverb and Warmth controls were the only means of controlling the Space Echo it would be a severely limited unit. However, there are five modes of operation, each with a subtly different character. These roughly correspond to the 12 modes found on the RE201 and are described as: S.Echo1 (single echo with reverb), S.Echo2 (panning echo with reverb), and S.Echo3 (mixed echo effect), R.Echo1 (straight reverb) and R.Echo2 (bright reverb). All parameters are active in modes 1 and 2, no reverb is available in mode 3, and only Warmth and Reverb are used in modes 4 and 5.

Because of the restricted number of effect parameters, the range of sounds obtainable from the RE3 is quite limited and there is, therefore, no need for an exotic array of memories. Each of the five modes has five memories assigned to it, sensibly referred to as 1,1 through to 5,5. A specific memory can be selected by stepping through the modes and memories, modified by adjusting the parameter knobs, and then written to by using the Write button. If another memory is selected without using Write, then any modifications to the parameter knob positions are forgotten by the system. Good standard fare. MIDI program change numbers can be assigned individually to memories enabling remote control of the unit. As usual with Roland equipment, the factory memories can be ►

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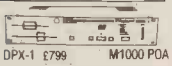

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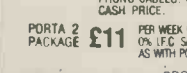

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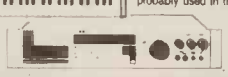

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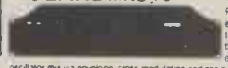

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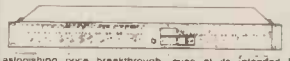

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ROLAND SBX80 SMPTE/MIDI	(EX DEM)	1,200	699
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OPCODE STUDIO + 2 INTERFACE	(MAC)	225	169
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OPCODE SEQUENCER	(MAC)	200	139
OPCODE MATRIX 6 EDITOR	(MAC)	99	19
OPCODE LINN DRUM LIBRARIAN	(MAC)	99	19
OPCODE DMCS SEQUENCER	(EARLY MAC)	199	19
MARK OT. UNICORN PRO COMPOSER	(MAC)	425	299
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DR. T. KCS SEQUENCER	(ATARI)	240	149

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quickly restored should you wish to do so. Learning to use the system is really very simple, and unlike many of today's mind-numbing machines, you don't get the feeling that you'll never quite get the best from the device because either (a) you haven't got enough time to experiment with it or (b) you don't have a degree in electronic engineering.

Sound Sense

AND SO TO the heart of the RE3 – the sound itself. Clearly it's far from an all-singing, all-dancing effects unit yet it can hardly be regarded as a cheap alternative.

"You get the impression that Roland have not only developed the RE3 to replace the Space Echo series, but have specifically designed it for the same uses."

Nevertheless, many otherwise cool-headed musicians and music companies are parting with significant amounts of cash to own these beasties.

In use you get the impression that Roland have not only developed the RE3 to replace the Space Echo series, but have specifically designed it for the same uses – predominantly acoustic sounds such as vocals and guitars. Not only is it simple to operate (essential for singers and guitarists) but its sound is instantly recognisable. Just about any acoustic sound source (as opposed to synthesised) benefits from being passed through the RE3. In stereo the machine really shines. Forget the lack of tone controls, the narrow bandwidth, and the simplicity of the system, the sound is everything – it simply reeks of class. Don't ask what the difference is between this and, say, an SPX90 or DEP5, just let your ears do the thinking. In fact, considering the apparent limitations of the unit, the range of subtle "space echo" effects is quite staggering, and it is this subtlety, combined with sound quality that is the strength of the RE3.

Verdict

IT'S DIFFICULT TO wholeheartedly recommend a unit that provides as few facilities as the RE3 Space Echo and the unit isn't without its niggles either – no line-in level control (which was present on the primitive RE201), fixed mains lead, and a poorly translated (but simple) manual. In operation the RE3 performed faultlessly, and presented no user difficulties whatsoever.

The unit is definitely at its best treating acoustic sounds. It seems to exaggerate the shortcomings of imitative synth patches and samples, although they sound impressive they also sound unnatural – exactly the aspect of such a sound you'd normally use reverb or echo to disguise.

The real problem in recommending the RE3 lies in its very limited scope. It's all very well for Roland to recreate the original Space Echo sound, with all its warmth and character, but perhaps they set their technological sights too low. Or, to put it another way, £600 is a lot to pay for such a limited device.

The RE3 deserves to be a success in the late '80s-early '90s, especially in more up-market environments. The bottom line is, if you're going to use an echo/reverb unit, try the RE3 first. If it does the job you want, then buy one – if it doesn't, look to today's line of ambitious multi-effects processors. But if you opt for the RE3, you'll never complain about the sound quality or the life it brings to your music. ■

Price *£599 including VAT*
More from *Roland (UK) Ltd, Great West Trading Estate, 983 Great West Road, Brentford, Middlesex TW8 9DN. Tel: 01-568 4578.*

patchW·O·R·K

If you're still waiting to see *your* particular synth featured in these pages, then why not be the first to submit some sounds?

Don't forget that if your patch gets published, you'll receive a **free year's subscription** to MUSIC TECHNOLOGY with our compliments. So send us your favourite sounds on a photocopy of an owner's manual chart (coupled with a blank one for artwork purposes) accompanied by a short demo-tape (don't worry too much about classic performances and impeccable recording quality; just present your sounds simply and concisely – and convince us you're the best of the bunch). Include a decent-length description of your sound and its musical purpose in life, and write your full name and address on each chart. And remember, edited presets are all very well, but an original masterpiece is *always* preferable. OK?

The address to send sounds to: Patchwork, MUSIC TECHNOLOGY, Alexander House, Forehill, Ely, Cambs CB7 4AF. ■

YAMAHA DX27
Pan Pipe
Justin Goodall, Eastleigh

Strangely enough, this DX27 patch is reminiscent of a strongly-blown pan pipe. It's very full sounding, with a convincing woody texture and an attack which benefits from a noisy, breathy quality. Justin recommends increasing the value of the D2R parameter on OP1 to shorten the release time. ■

ALGORITHM	FEEDBACK	LFO WAVE	LFO SPEED	LFO DELAY	LFO PMD	LFO AMD	LFO SYNC	PITCH MODULATION SENSITIVITY	AMPLITUDE MODULATION SENSITIVITY	EG BIAS SENSITIVITY	KEY VELOCITY SENSITIVITY
1	7	TRI	0	0	0	0	OFF	0	0	0	0
1	2	3	4	5	6	7	8	9	10	11	12

OP	FREQ RATIO	DETUNE	AR	D1R	D1L	D2R	RR	OUT LEVEL	RATE SCALING	LEVEL SCALING	AME	EG BIAS SENSITIVITY
6	25.95	0	31	31	15	10	0	99	0	49	0	0
5	25.95	0	19	22	13	16	8	56	8	56	0	0
4	4.00	0	31	17	0	4	5	99	5	99	0	0
1	1.00	0	14	31	15	5	8	99	8	99	0	0
OSCILLATOR			ENVELOPE GENERATOR					OPERATOR	KEYBOARD SCALING			

TRANSPOSE: C1

13	14	15	16	17	18	19	20	21	22	23	24
POLY/MONO	PITCH BEND RANGE	PORTAMENTO MODE	PORTAMENTO TIME	FOOT SW ASSIGN	WHEEL RANGE PITCH	WHEEL RANGE AMPLITUDE	BREATH RANGE PITCH	BREATH RANGE AMPLITUDE	BREATH RANGE PITCH BIAS	BREATH RANGE EG BIAS	
POLY	2	–	0	POR	50	0	0	0	0	0	

ROLAND D50
El Accoustico
Frank Thomson, Stockholm.

Exiled American Frank Thomson has submitted an extremely authentic Spanish guitar patch for the ever-popular D50. The patch employs two tones in Dual mode, though each could equally as well be used alone. The sound is quite velocity-expressive, and hitting the keys hard will produce a "string-snapping" effect giving a miked acoustic guitar sound. ■

Patch No "n"
Patch Name EL ACCOUST100

Key Mode	DUAL
Split Point	
Tone Balance	65
L-Key Shift	-12
U-Key Shift	-12
L-Fine Tune	+04
U-Fine Tune	-03
Bender Range	02
After (Pitch Bender)	00
Portamento Time	53
Portamento Mode	UL
Hold Mode	UL
Output Mode	01
Reverb Type	10
Reverb Balance	50
Total Volume	100
Chase Mode	ULU
Chase Level	97
Chase Time	58
MIDI TxCH	
MIDI SepCH	

Used Tone
Upper
Lower

Tone Name HI-BRITE Used Patch No "n"

(Common Parameters)

Structure No	52
Partial Mute	

Pitch ENV: Velocity, KF(Time)

LFO	1	2	3
Wave	TRI	TRI	
Rate	69	48	
Delay	00	00	
Sync	ON	OFF	

EQ	
L1	600
Lg	+02
Hf	8.0
HQ	0.3
Hg	-05

Chorus	
Type	04
Rate	25
Depth	86
Balance	44

Pitch Modulation: LFO Depth 00, Lever Mod 63, After Mod 21

(Partial Parameters 1/2)

		1	2
WG Pitch	Coarse	C4	G5
	Fine	00	+01
	KF(Pitch)	S1	S1
WG Modulation	LFO Mode	A≠L	A≠L
	NV Mode	OFF	OFF
	Bender Mode	KF	KF
WG Wave Form	Wave Form	SQU	SQU
	PCM No		
WG Pulse Width	PW	24	60
	Velocity	+10	+6
	After Touch	00	00
	LFO Select	/	/
	LFO Depth	/	/

TVF		1	2
TVF	Frequency	46	46
	Resonance	0	11
	KF(Freq)	1/4	0
	Bias Point/Bias Direction	>C4	>C4
	Bias Level	01	01
TVF ENV	Depth	44	36
	Velocity	38	43
	KF(Depth)	00	01
	KF(Time)	01	01
TVF ENV	T1	00	00
	T2	41	50
	T3	50	58
	T4	66	67
	T5	40	46
TVF ENV	L1	100	100
	L2	70	69
	L3	36	40
	SusL	00	20
	EndL	00	00
TVF Modulation	LFO Select	+2	+2
	LFO Depth	29	02
	After Touch	00	00

TVA		1	2
TVA	Level	100	100
	Velocity	+44	+44
	Bias Point/Bias Direction	>C5	>C5
	Bias Level	-01	-01
TVA ENV	Velocity (T1)	01	01
	KF(Time)	01	02
TVA ENV	T1	00	00
	T2	47	56
	T3	56	53
	T4	61	61
	T5	44	44
TVA ENV	L1	100	100
	L2	80	76
	L3	48	48
	SusL	01	20
	EndL	00	00
TVA Modulation	LFO Select	/	/
	LFO Depth	/	/
	After Touch	/	/

Tone Name WARM-WOOD Used Patch No "n"

(Common Parameters)

Structure No	01
Partial Mute	

Pitch ENV: Velocity, KF(Time)

LFO	1	2	3
Wave	TRI	TRI	TRI
Rate	75	33	25
Delay	00	00	00
Sync	ON	OFF	OFF

EQ	
L1	350
Lg	+06
Hf	420
HQ	4.2
Hg	-09

Chorus	
Type	02
Rate	42
Depth	44
Balance	40

Pitch Modulation: LFO Depth 00, Lever Mod 50, After Mod 29

(Partial Parameters 1/2)

		1	2
WG Pitch	Coarse	C4	C4
	Fine	00	-04
	KF(Pitch)	1	S1
WG Modulation	LFO Mode	A≠L	A≠L
	P-ENV Mode	OFF	OFF
	Bender Mode	KF	KF
WG Wave Form	Wave Form	SQU	SQU
	PCM No		
WG Pulse Width	PW	33	27
	Velocity	-02	00
	After Touch	00	00
	LFO Select	+3	+3
	LFO Depth	00	00

TVF		1	2
TVF	Frequency	44	44
	Resonance	09	13
	KF(Freq)	1/4	1/4
	Bias Point/Bias Direction	>C4	>C4
	Bias Level	+3	+2
TVF ENV	Depth	37	36
	Velocity	20	93
	KF(Depth)	02	01
	KF(Time)	01	01
TVF ENV	T1	00	00
	T2	42	50
	T3	50	58
	T4	66	67
	T5	40	46
TVF ENV	L1	100	100
	L2	70	69
	L3	36	40
	SusL	00	20
	EndL	00	00
TVF Modulation	LFO Select	+2	+2
	LFO Depth	06	16
	After Touch	00	+01

TVA		1	2
TVA	Level	100	100
	Velocity	+44	+44
	Bias Point/Bias Direction	>F4	>A3
	Bias Level	-02	-03
TVA ENV	Velocity (T1)	03	03
	KF(Time)	01	02
TVA ENV	T1	00	00
	T2	50	60
	T3	58	56
	T4	63	63
	T5	47	47
TVA ENV	L1	100	100
	L2	82	76
	L3	44	47
	SusL	00	20
	EndL	00	00
TVA Modulation	LFO Select	-3	+3
	LFO Depth	31	15
	After Touch	00	00

CASIO CZ1
Bottle Bass
Colin Muir, Bournemouth.

'Bottle Bass' is an upfront metallic bass patch reminiscent of the DX7-style slap bass. Several good variations can be made by increasing detune (Colin recommends a further seven semitones), switching DCO wave two off, and/or increasing DCW and DCA velocity parameters. ■

PARAMETER

LINE SELECT	MODULATION RING	MODULATION NOISE
1+2'	ON	
(1,2 1-2' 1-1)	(ON/OFF)	

DETUNE +/-	DETUNE OCTAVE	DETUNE NOTE	DETUNE FINE
+	2	00	01
(-/-)	(0-3)	(0-11)	(0-60)

VIBRATO WAVE	VIBRATO DELAY	VIBRATO RATE	VIBRATO DEPTH
1	00	52	04
(1-4)	(0-99)	(0-99)	(0-99)

OCTAVE +/-	OCTAVE RANGE
-	1
(-/-)	(0-1)

1

DCO 1

WAVE FORM FIRST	WAVE FORM SECOND	VELOCITY
3	4	00 (0-15)
(1-8)	(0-8)	

E N V (PITCH)

STEP	1	2	3	4	5	6	7	8	
RATE	50								(0-99)
LEVEL	00								(0-99)
SUS/END	END								

DCW 1

KEY FOLLOW	VELOCITY
3 (0-9)	02 (0-15)

E N V (WAVE)

STEP	1	2	3	4	5	6	7	8	
RATE	89	84	50						(0-99)
LEVEL	74	19	00						(0-99)
SUS/END		SUS	END						

DCA 1

KEY FOLLOW	LEVEL	VELOCITY
0 (0-9)	15 (0-15)	01 (0-15)

E N V (AMP)

STEP	1	2	3	4	5	6	7	8	
RATE	99	41	39	51					(0-99)
LEVEL	99	68	00	00					(0-99)
SUS/END			SUS	END					

2

DCO 2

WAVE FORM FIRST	WAVE FORM SECOND	VELOCITY
3	2	00 (0-15)
(1-8)	(0-8)	

E N V (PITCH)

STEP	1	2	3	4	5	6	7	8	
RATE	50								(0-99)
LEVEL	00								(0-99)
SUS/END	END								

DCW 2

KEY FOLLOW	VELOCITY
2 (0-9)	01 (0-15)

E N V (WAVE)

STEP	1	2	3	4	5	6	7	8	
RATE	99	56							(0-99)
LEVEL	91	00							(0-99)
SUS/END		END							

DCA 2

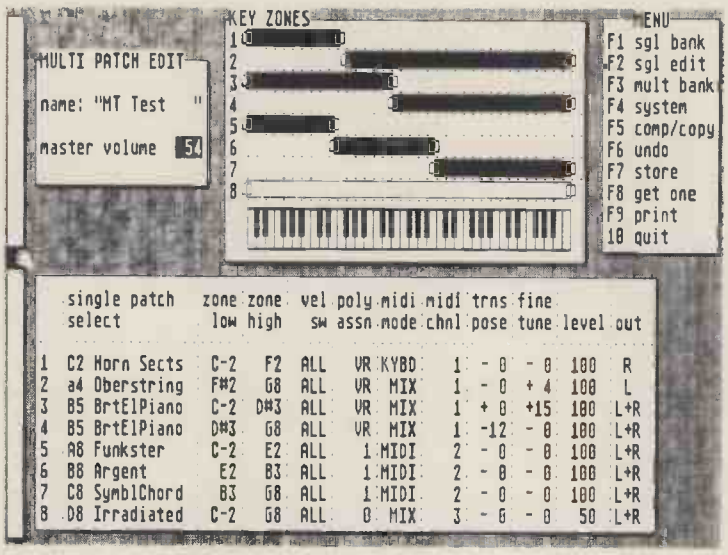
KEY FOLLOW	LEVEL	VELOCITY
0 (0-9)	15 (0-15)	02 (0-15)

E N V (AMP)

STEP	1	2	3	4	5	6	7	8	
RATE	90	07							(0-99)
LEVEL	99	00							(0-99)
SUS/END		END							

KAWAI K1 EDITORS

Software for the Atari ST



Dr T's KI Editor/Librarian

Such has been the popularity of Kawai's K1 synth that there are now a range of visual software editors available to ease the burden of programming. Review by Vic Lennard.

THE KAWAI KI is a hybrid synth which derives its sound from a combination of samples and digital synthesis. It's been a popular late-'80s formula – other hybrids include the Roland D50 and Korg MI. But all these machines incorporate another aspect of '80s design philosophy that's left them short of the old knobs 'n' sliders that used to make synth programming fun. Consequently a number of third-party software writers have felt it opportune to provide users of these machines with the "soft" alternative to panel-editing of sounds. Here we'll look at editing programs for the Kawai KI from Dr T's, Soundbits, Drumware and Steinberg.

For those of you rusty on your KI editing, here's a quick reminder of its programming structure; two internal sound banks (I,i), each contain 32 single patches, each of which is created by combining either two or four sound sources. These sources are drawn from 53 sampled (PCM) and 204 digitally synthesised (VM) sounds, each source having its own envelope. Up to eight single sounds can be stored as one of 32 multi-patches, giving eight-voice multitimbrality with eight-note polyphony. An external port is provided for ROM cards, with a similar bank set up as for the internal, and RAM cards for saving edited patches.

There are, however, a couple of problems with the KI which affect sofware editors; firstly, there is no temporary buffer – edits have to be performed in one of the single slots so destroying the patch that existed there. Secondly, a multi-patch must have access to the relevant single patches in the correct positions. And thirdly, internal multi-patches cannot access external single patches and vice versa.

Dr T's K1 Editor/Librarian

DR T'S/CAGED ARTIST editors are already a well-established and well-respected line of software editors. On booting up, the program automatically obtains the internal banks from the KI if connected via MIDI (otherwise a default file is loaded). The front page is divided into four principal areas; 64 single patches, labelled A and a, eight single patches constituting the currently selected multi-patch, a menu column for moving between the various pages and a selector box for the four patch banks which can be resident in memory at the same time. Certain facilities are common to most pages: loading from/saving to disk, getting/sending sounds from and to the KI and an undo buffer for the last edit.

Movement between pages is by use of the mouse or by the Atari function keys as labelled in the menus. From the front page, F1 moves to the Single Edit page where either the common parameters (volume, number of sources, vibrato, pitch-bend and so on) or the source specific variables may be edited. All four sources, including their envelopes, are displayed on the same page although it takes a little time to get used to some of the abbreviations that have had to be used to fit it all in. Changing values is accomplished in one of two manners; click on a parameter, "grab" it by holding the left-hand mouse button down and drag it up or down until the required value is obtained – the cursor changes to a hand and the slider on the left-hand side of the page moves up and down correspondingly – or else key in the value from the Atari keyboard and press "return". Individual source envelopes are edited by dragging small boxes acting as joints to the required position. As there are 256 waveforms to choose from, clicking on a source's wave number brings up four pages of waveform names which can be selected from – a welcome alternative to keeping sheets of paper to hand. There is a randomise function on the menu which allows a mask to be set up to include specific parameters for randomisation. Another function called Load Section permits the copying of any part of any source to that of another source.

Pressing F2 takes you to the Multi-Bank which lists the ▶

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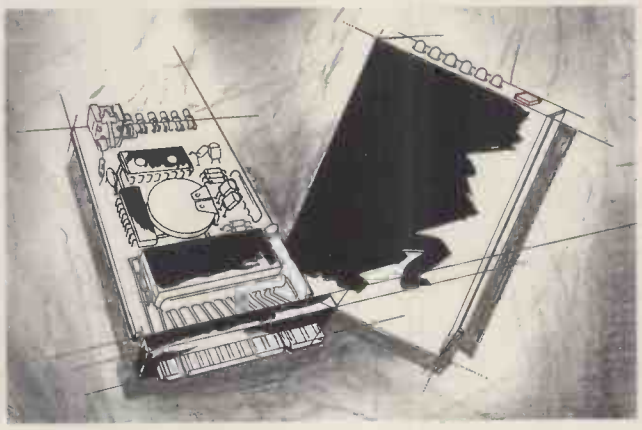

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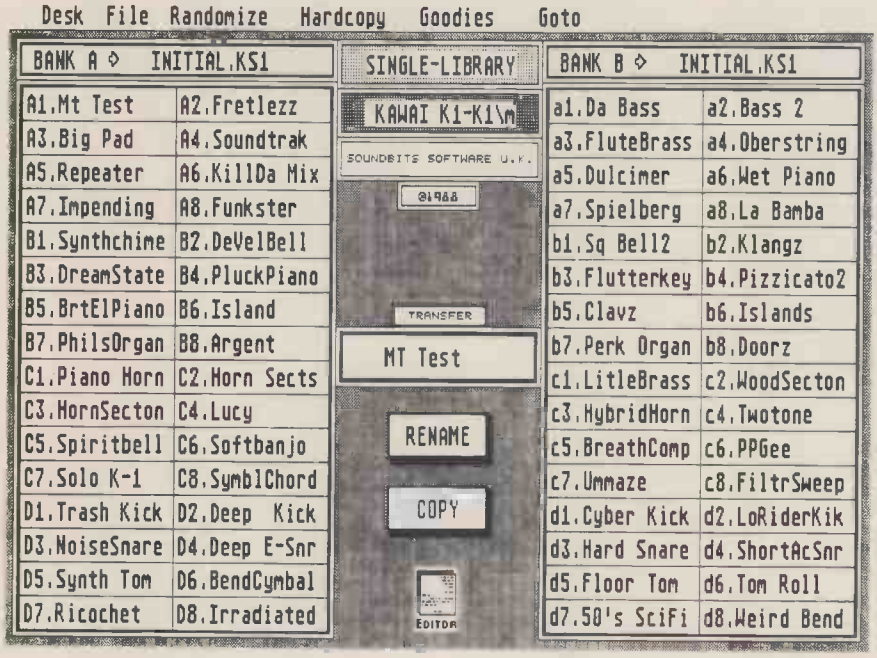
► 32 multi-patches in one table and the eight singles for the currently selected patch in another – choosing a different multi brings up the relevant single. Pressing F3 takes you to Multi Edit which displays all data for the multi-patch in the form of a table and a key zone chart, complete with a keyboard to enable quick setting up of keygroups with the selected single patches shown in white if the polyphony is set to zero or in a choice of three shadings dependent on whether the velocity range is set to hard, soft or all. The virtual slider is again present for altering parameters.

The final page is the System page. Here you can set



Soundbits KI Voice Master ST

MIDI channels, Merge/Thru modes and access Mouse Play (a velocity-sensitive invisible keyboard exists on each page with high velocity at the top of the page and notes changing from left to right, played from the right mouse button). It's also possible to determine which of the KI's voice memories will be overwritten when editing – in lieu of the absent edit buffer.

Other facilities include a print option to list single and multi banks as well as the pages of edits and a disk format option – an important feature which gives some indication of the thoroughness with which the program has been written. The manual too is written in a helpful manner, Dr T's can even afford to be tongue-in-cheek in places.

Soundbits K1 Voice Master ST

THE MASTER DISK for Voice Master comes with two complete banks of sounds as well as a number of single and multi banks. On booting up, a variety of questions are asked on-screen to ensure that the editor sets itself up correctly – is a KI connected, does it have a RAM/ROM card, which MIDI channel is it on? After this the internal data is procured from the KI and the front page appears. This presents the two banks of single patches (A,a), a transfer box for moving a patch to the Edit page, three other boxes entitled Rename, Copy and Editor and the usual GEM menu bar. A single patch can be selected by either dragging it to the transfer box or double clicking on it with the left-hand mouse button.

Double clicking on the Editor icon takes you to the Single Patch Edit page which has the common function parameters listed in the lower half of the page, and source mutes, source select and return to single bank in individual boxes in the top half. It also takes patch A1 in the KI into use as an edit buffer. Clicking on one of the source select icons changes the screen to a large envelope with the envelope values at the side. These are edited by dragging the box joints. Underneath are the frequency and wave parameters. On this page also lies a problem; the best way to edit a KI is to mute all sources bar the one being edited, alter parameters to taste and then go onto the next source, occasionally unmuting all of them to listen to the sum effect of the edits. But to mute or unmute sources here involves moving back to the previous page – most disconcerting, especially if lengthy alterations are intended. Another point which will slow down the editing procedure is that waveform selection is by a box which scrolls far too slowly for my liking. Also, copying part of the data from one source to another is offered on the bank page instead of here. All in all, the layout could have been a little more coherent.

The Randomise heading in the menu bar gives you two choices; option 1 will create a new patch subject to a pre-determined algorithm, while option 2 works with a mask which allows selection of any variables from the sources.

General testing of edits is quite convenient. Clicking on the right-hand mouse button at any time will result in the patch being played at middle C, while the Atari function keys F1-F4 play different chords and F5 plays a pre-programmed sequence of notes. Alternatively, function key F10 produces a non-sensitive keyboard which can be played with the mouse.

"Goto" in the menu bar switches from single to multi patches, and takes you to the multi patch-bank page. This is identical to the single equivalent, but without the copy facility. Select a patch and enter the multi-edit page which has two main divisions. The first has eight numbered keyboards to represent the eight single patches, each with the patch number above it and with the selected one in black (the remainder being grey), while the second contains the details of the chosen single patch. Unfortunately, this means that only information for one part out of the possible eight can be shown at one time, which again makes editing awkward and the soloing of one single difficult.

The lack of an undo facility is a oversight, as is the omission of a MIDI Thru for editing either the modular or rack-mounted versions of the KI, because there is no way of testing the velocity sensitivity of patches without it. More encouragingly, a disk format option is offered, as is the printing out of bank names and edit parameters.

Drumware K1 Editor/Librarian

DRUMWARE'S MASTER DISK comes with five new banks of sounds – these consist of the two ROMs that Kawai sell in this country, another two from America and one of drum sounds (including a selection of synthesised Roland TR808-style voices).

The editor loads up with a default file requiring you to go to the menu heading of "Kawai", where there is a complete set of interface selctions for the Atari and the KI, including getting internal bank "I" and loading it in as "i" and vice versa.

The front page is impressive as it shows all editing data for the single patches with separate boxes for common and frequency/wave/envelope parameters, key scale and velocity curves, a five-octave velocity-sensitive keyboard (which can be transposed by octaves up and down) and an area designated as the workspace (which initially shows single bank I but an option in the single menu allows this to be changed to bank i). The screen size means that abbreviations are necessary as with the Dr T's editor, but overall the page is very well laid out and doesn't feel claustrophobic. Clicking on any one of the envelope ►

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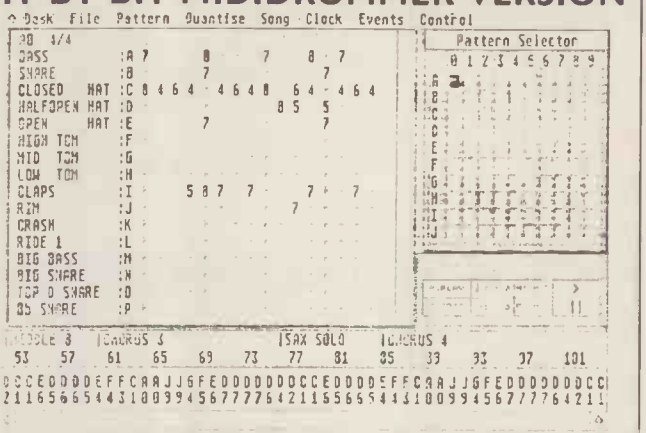

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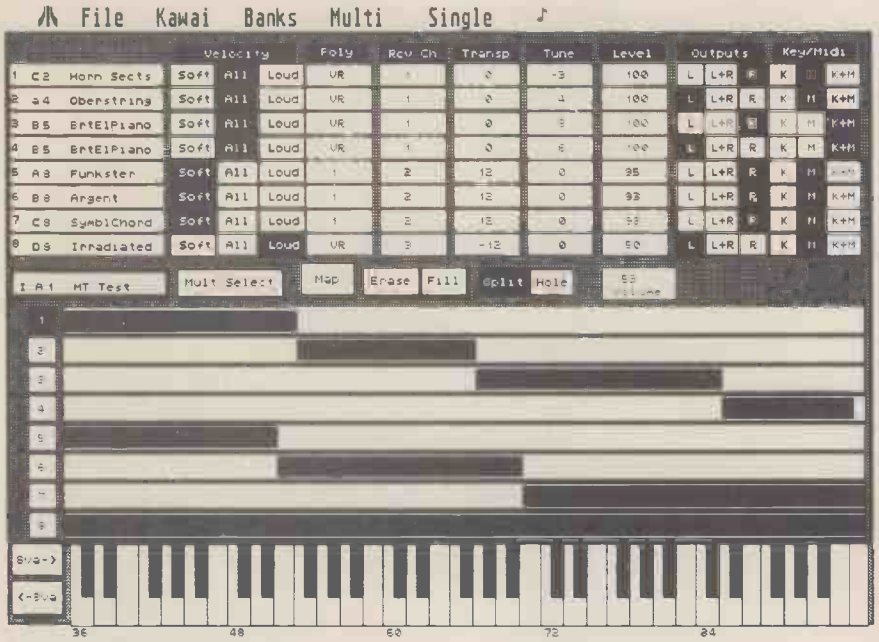
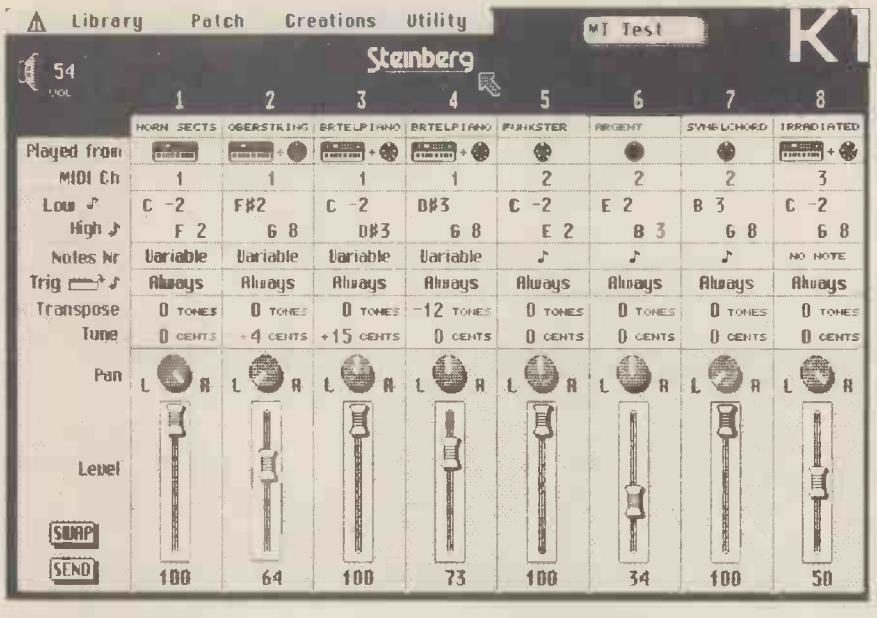
► displays changes the workspace to a large envelope window while keeping the rest of the values in view, and editing of this envelope is again achieved by dragging the small joint boxes which also show the changes in the smaller envelope windows as they take place. If Envelope Track has been selected from the menu, changes to any envelope will be applied as offsets to all the others –a more sensible option than simply copying the whole envelope.



Drumware KI Editor/Librarian

Furthermore, the Copy Single option in the menu allows either a portion or the complete data set of a source to be copied to another. Mute options for each source are to be found here as are solo icons that allow one specific source to be solo'd with the press of one button.

Six banks can exist in memory at any one time and, by



Steinberg Synthworks KI

using the Banks option in the menu, these can be copied, renamed, viewed – which shows all 96 single and multi patches – and printed out. The Multi and Single menus also allow you to see the names of the currently selected banks of patches. These appear in the centre of the screen but leave the rest of the parameter values visible.

The Multi-Edit screen is as well laid out as its single counterpart with two large boxes housing all multi data, graphically represented key zones and the keyboard again at the foot of the page. A row of smaller boxes in the centre of the screen hold the following functions: Multi Select changes the key zone window to a selection box of the 32 multi patches; Map activates the zone grid which can be edited by selecting one of the single numbers on the left-hand side (notes are then dragged across their range from low to high and drawn as a black bar); Erase deletes the range; Fill sets the zone across the MIDI range and Hole removes a portion of a bar.

There are three different ways of creating sounds, these are accessed from Randomizer in the Single menu. The first two, Randomizer and Randopolate both use a mask in the same manner as the previous editors but differ in that Randomizer generates random numbers between a user-set upper and lower limit, while Randopolate takes this a step further and interpolates (selects a value at random between two choices) the new sound with the original. Basically, Randopolate combines a more musical result with a travesty of the English language. Interpolate, the third method, creates a patch whose parameter values lie between those of two user-selected single patches. Either a single patch or a complete bank can be created with each of these techniques – and they do work, especially Interpolate which is similar to the method used in Hybrid Arts' DX-Android.

The Undo feature is also worthy of note. When a patch is selected (single or multi) it is written into the undo buffer and can be recovered by pressing "undo" on the Atari, or updated after any edits by pressing "insert". It is conceivable that sounds may need to be temporarily held while further editing continues, in which case "Undo=>TempBuf" is selected from the menu and the sound is saved to a different buffer and can be recalled by using "TempBuf=>Undo".

Edits can be heard by playing them on the keyboard or by activating "Autoplay" which plays either a note or a chord, if Chord is selected (the specific chord can be programmed in Set Chord) each time the left mouse button is released following an edit.

While disks cannot be formatted from within the program, there is a monitor for "free disk space" and the option of deleting unwanted files from a disk to assist file management. All menu selections can be chosen by keyboard equivalents. The manual is clear and helpful and includes useful hints like how to correctly tune the PCM samples.

Steinberg Synthworks K1

IN USUAL STEINBERG fashion, the copy protection of Synthworks KI employs a dongle which must be inserted in the cartridge port (which means more changing of dongles or expense in the form of an expander). On booting-up, the Single Edit page appears which shows all edit data for the sound sources in the form of four flow charts – one for each source along with graphic spectrum analyses of the digital waveform where used. Clicking on any of the envelopes opens it up into a large window where the envelope can be dragged in the same fashion as the other editors – with a few extras features. Eight custom envelopes are displayed and any one may be selected as a starting point from which the required shape may be created; the envelopes for the other sources can be displayed as dotted lines in the same window; Undo works at two levels – one click removes the previous edit while a second click takes the envelope back to the start and any of the other envelopes can be selected and edited without exiting from the current window, so speeding up the process considerably. Four single voice buffers are shown at the top of the page as A, B, C and D and can be copied from one another by selecting with the right-hand mouse ►

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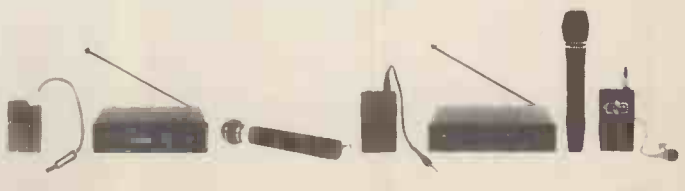

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► button and clicking on the destination with the left – no more dragging.

The single patch shown is that of A1 and the current bank in the K1 has to be imported before editing can commence. This appears on the Librarian page which can hold up to three complete banks as well as a buffer bank X, to which can be transferred either one multi patch with its eight associated singles or individual singles. Click on any multi and its single patches will be highlighted, or click on a single and any multi patches in which it is present will be shown. Using the same movement process as on the previous page, patches can be trashed, swapped or moved to one of the four edit buffers or bank X. Other facilities on this page include Alphabetize which displays the single patches in alphabetical order yet keeps the multi-single links, and Semantic, which can label each single patch with up to eight adjectives chosen from a list with 255 possibilities, and can then scan all files in disk to find those matching particular requirements, even to a chosen depth.

The Multi Edit page encompasses editing in a visual manner (similar to a mixing desk) with sliders for the volume control of each single (which can be dragged), pan pots for output selection and a Swap icon for flipping between the current patch and that selected in bank x. Even the polyphony is displayed as a number of quavers.

Randomisation has four options, each of which can create either a single patch (placed in buffer B) or 32 patches (written to 33-64) the first three of which use a mask; Slight and Medium variation each follow preset algorithms to generate random patches while Blind follows no pattern at all; Patch Creation chooses from three algorithms and scans the singles in a bank, creating new patches based on them so that a bank containing 32 similar sounds should give very usable results.

There is an onboard sequencer which will hold up to 3000 notes at 1/96 ppqn resolution and will record notes and controller info. Patterns can be loaded from or saved to Pro24 pattern files and the sequencer will keep merrily churning out the looped pattern while editing continues – a bit of a masterstroke. Alternatively, there is a velocity-sensitive onscreen keyboard which can control pitch-bend, aftertouch and modulation or an Auto note option which will play a note each time an edit is made.

Other facilities include all menu selections being available as equivalent keyboard strokes, 40 pages of Help (effectively an onboard manual) which can either be examined or set to screen the relevant page as a function is selected, a Disk Utility which replaces the standard GEM equivalent, and has a variety of new features (including a format option), Mouse Acceleration modes for setting different speeds for the visual icon to scoot around the screen at, Mouse Edit modes for setting the manner in which edits are carried out and a comprehensive choice of screen printing. The manual (all 58 pages of it) is well written and aimed at being a tutor rather than a guide.

Summary

	Dr. T	Soundbits	Drumware	Steinberg
Copy Protection	Master Disk	Key Disk	Mouse Port Key	Cartridge Key
Banks in Memory	4	1	6	3
Single Buffers	1	1	1	4 + Bank X
Pages to Edit All Single	3 + Waveforms	6	2	2 inc. Lib.
Pages to Edit All Multi	2	10	2	2 inc. Lib.
Undo?	Yes	No	Yes + Undo=>Temp	No Use Buffers
Key Equivalents	No	No	Yes	Yes
On-Screen Keyboard?	V/Sens Invisible	No V/Sens + F. Keys	V/Sens + Mod. etc	V/Sens + Mod. etc
Price	£99	£75	£99.95	£99

Verdict

Each editor has pros and cons – Steinberg's little sequencer, for example – but, personally, I found the Drumware editor preferable on the grounds of speed of operation.

Soundbits Voice Master has the distinct disadvantage of poor page layout which will slow down the speed at which you can edit, but is very simple to understand and use. Dr T's editor is equally clear-cut in use and offers more banks in memory. However, neither of these offer you the ability to move between pages and select functions by key equivalents (Dr T's Atari function keys change from page to page).

Drumware's Editor/Librarian and Steinberg's Soundworks both employ high-quality graphics, and in the case of the Steinberg program, the speed with which you can edit is highly impressive, as is the idea of semantics and the choice of key equivalents. The Drumware program has the excellent Multi Edit page, permitting speedy setting up of a multi-patch, and an Interpolate feature for creating new patches, which is probably the best on offer from any of the editors.

The bottom line is that all four editors work well and all offer a desktop accessory which will load songs from disk into a K1 without exiting from a GEM-based sequencer. What more did you want? ■

Prices *Dr T's Editor Librarian, £99; Soundbits K1 Voice Master ST, £75; Drumware K1 Editor, £99.95; Steinberg Synthworks K1, £99. All prices include VAT.*
More from *Dr T's: MCM, 9, Hanon Street, London NW8. Tel: 01-724 4104.*
Soundbits: 48, Galton Tower, Civic Close, Birmingham B1 2NW. Tel: 021-733 2063.
Drumware: Hybrid Arts (UK) Ltd, 24-26 Avenue Mews, Muswell Hill, London N10 3NP. Tel: 01-883 1335.
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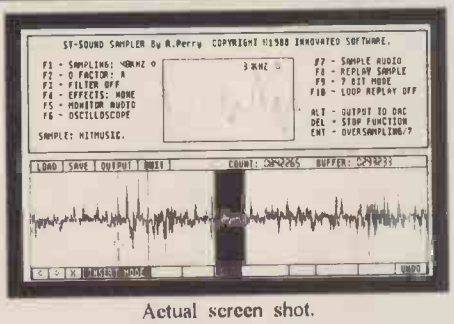

SAMPLE TIMES 520ST
@48KHZ 8.29secs
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Actual screen shot.

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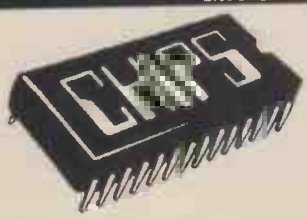

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For once it is nice to see other retailers copying our ideas (as well as our ads!). Free courses with packages, faulty good replaced and money refunded are all part of a service to which a customer is entitled, and we are glad that other dealers are at last realising this.

Of course, most of them still don't realise that this service should extend to evenings, Sundays and Bank Holidays as well, but then you can't have everything — except at Thatched Cottage!

NEW STOCK

Whilst we do not pretend to carry EVERY item from EVERY manufacturer, *(as some shops seem to - ever tried putting it to the test?)*, all new equipment is tested in our of our three working studios, and if we like it, our buying power can usually ensure that we have it in stock at all times (even when your local dealer might have run dry!). In addition, if we recommend an item, we will REFUND YOUR MONEY if you do not agree with us.

THIS MONTH'S BEST BUYS

KORG M1 MIDI WORK STATION
FOSTEX R8
ALLEN AND HEATH SABER CONSOLES
NOMAD 8:2 REDDIMIX
YAMAHA SPX1000
TOA 8 TRACK AND NOMAD REDDIMIX

Due to overwhelming demand we have finally produced a Thatched Cottage Newsletter. As well as giving details of some VERY special offers, it contains a complete secondhand and demonstration list (the list we advertise represents only a fraction of actual stock). There are also details of courses and classes and we briefly introduce ourselves!

Why not go on our mailing list and write or telephone for your copy?

IF YOU'RE INTERESTED IN BUYING A PORTASTUDIO, A PA OR AN 8 TRACK PHONE FOR A FREE FAX PACK (Specify Which)

CASIO PORTABLE R-DAT + RACKMOUNT KIT

A few have been coming into the country at inflated prices, but at last the Casio R-Dat is finally here at a realistic price. An all-singing - all-dancing — fully-portable DAT D.A.T. Recorder plus Battery Charger/Adaptor for only £651 + VAT. Plus with every machine purchased we will be supplying a Free Thatched Cottage Rackmount Kit complete with Tape Storage and Duplicate Front Panel Connections — Give Us A Call!

When it comes to new equipment you may have noticed that we don't say 'phone for the best deal, POA, or "lowest price guarantee" (Ha! Ha!). Our bulk buying policy can usually guarantee that a telephone call to us will not be wasted and in any case we can throw in those "hidden" extras — cables with multitracks, patchbays with desks. (By the way, next time a dealer "guarantees" the *lowest* price and then can't deliver, try reporting them to the local Office of Fair Trading - it will teach them not to waste your time!)

To be honest though, if you spend all afternoon on the telephone the chances are you might find someone somewhere who will undercut us by a pound or two. The difference at THATCHED COTTAGE is if your E16 breaks down on a Sunday morning or your Drum Machine blows up on a Bank Holiday Monday you CAN ring us, we'll be here and we WILL do something about it — 365 days a year. Have you ever needed help and advice outside shop hours? If you are serious about your music you will know that it is quality of service that makes the difference and at THATCHED COTTAGE it's only a phone call away!

ALLEN & HEATH SABER 16 & 24 TRACK CONSOLES

This year's APRS A&H launched a revolutionary new professional mixing console — the SABER offering the quality of a Sound-craft and the durability of a TAC, it has comprehensive MIDI facilities and many features as standard offered only as options by other manufacturers, full fader automation and 24 track version now available.

Demand has been so great every month we sell the entire UK production run in advance! If you're considering spending around £5,000 on a high quality multi-track console then you owe it to yourself to check this one out! Give us a call and we will send full details and arrange a demonstration.

THATCHED COTTAGE RECORDING SCHOOL

In response to popular demand we now run a one week recording course, designed specifically for those of you who feel they can make a go of running a professional 8, 16 or 24 Track Studio. The emphasis will be largely on the practical side and topics covered are finance, premises, running a recording session and hints and tips on every aspect of recording. Class sizes are limited to eight at a time and guest speakers will cover relevant areas. The price is just £200 for the week, including accommodation. Interested? Telephone or write and we'll tell you more.

FULL 8 TRACK SYSTEM FOR £999!!!!

At Thatched Cottage we are able to offer *exclusively* the revolutionary TOA 8 track cassette with built in monitor section *PLUS* the high quality full feature Nomad 8:2 mixer (Retail £175) Plus all the plugs and cables for the stunning price of £999 inc. VAT!!!

There's no point in prattling on about it - a full 8 track system for under £1000 Is an amazing breakthrough in budget recording - just send for full details! And to make it really easy, a credit card will give you instant credit of up to £1500 - just call in and take away a system. *The phonelines are open!!!*

Recently a few dealers have complained about our secondhand and ex-demo list — it seems they are losing too many customers!

Being by far the largest supplier of 8 + 16 track equipment in Britain, we've decided we can afford to give away a few secrets! We simply tell customers that if any new equipment they purchase breaks down in the first two months we won't fix it, we will REPLACE it!

Result! Yet another customers who KNOWS they can rely on Thatched Cottage, and a secondhand list full of the latest gear, factory repaired, in mint condition with a full guarantee.

Simple? We didn't become the biggest without being the best!

SOME SECONDHAND AND EX-DEMO BARGAINS

Alesis HR16	£275
Alesis MMT8	£199
Seck 12-8-2 Mixer, Mint	£750
Seck 18:8:2	£899
Scintillator, New	£125
Drawmer DS201/Dual Gates	£255
Alesis Midiverb II	£199
RSD Series II 16-16-2, As New	£2,700
Yamaha DEQ7 Digital Equalizer	£599
Tascam 38, (Full Guarantee)	£1,299
Fostex M80, Excellent Condition	£950
Lexicon PCM70	£1,199
Tascam MS16 1" 16 Track, Mint	£4,500
Bel BD80S Stereo Sampler	£599
Alesis Microgate/Compressors	£99 each
Korg DDD5 Drum Machine + Bass Sounds Silly Price	£299
Tascam 32, Boxed, Mint	£699
Tascam SA Mixer	£150
Vestafire digital delay	£130
Roland MKS100 sampler	£300
Aphex Aural Exciter type C	£200
Nomad SMC1	£175
Yamaha REX50 Multi Processor	£199
12U Angled Rack Trolley Stand	£75
Yamaha MT2X 6 Inputs & Double Speed 4-Track	£299
Nomad Axxeman	£199
Yamaha TX81Z 8-Voice Expander	£249
Boom Stands (Heavy)	£18
Sony 1000ES R-Dat (Including Conversion)	£1,050
Sony PCM501 Digital Mastering	£399
Revox B77 7½ips, Mint	£499
Yamaha TX16W, 16 Voice Sampler With Full Factory Library	£1,199
Drawmer LX20 Compressor	£199
Yamaha TX1P Piano Module	£399
JB1 4311 Monitors	£599
Yamaha DX5, Amazing Value	£699
32 Way Patchbays (new)	£30
Yamaha Rev 5	£750
Aphex Dominator - the Ultimate Limiter/Exciter	£699
Yamaha DMP7 Fully Automated Digital Desk	£1,399
Teac 3340 With Flight Case	£399
Yamaha P2150 (2X150W)	£299
TC2290 plus Foot Controller + 8 Sec Sampling	£1,699

(All prices exclude VAT)

SPECIAL OFFERS

Yamaha PMC1 Drum to MIDI Converter, 8 inputs, inc. mic inputs was £500 now amazing exclusive offer of £199. + VAT

Yamaha WX7 Wind to MIDI Converter, amazing deal £249 + VAT

Yamaha RX5 Voice Cartridges £15 + VAT - Yamaha TX81Z Expander module £299 inclusive

COMPUTER NEWS!

Ever fancied a computer based sequencer but couldn't afford it?

For a limited period, we are giving away a Steinberg Pro 12 (the ½ size version) with every Atari 1040 absolutely free! At only £525 + VAT this has to be worth looking at.

LATE CHRISTMAS PRESENTS!

Fancy a high quality compact disc player for a stunning price of only £125 + VAT?
All you have to do Is telephone and order one

For those of you who are seriously considering starting a commercial studio I've come up with three packages, each containing everything you will need for your first paying session, from the Multi-track Machine right through to DI Boxes and Cables. The price of the 8 Track System is £4,300 + VAT, the 16 Track is £7,800 + VAT and the 24 Track is £19,500 + VAT. At Thatched Cottage we proved it *could* be done, and we have helped many new studios to open and start making money — our experience could help you. Give me a ring and have a chat — what have you got to lose? Plus: FREE Thatched Cottage Recording School Course to package buyers!!

HOT NEWS!

The new Fostex Portastudio (X26) and 8 track (R8) from Fostex are in stock and destined to be world beaters. Full details in the fax pack and news letter.

We still have some Yamaha MT2X 6 channel, double speed, super porta studios available - great value £390 + VAT

Yamaha SPX1000 mind blowing multi effect unit, now in stock £868 plus VAT!

Because we are their largest UK dealer, Studio Master (RSD) have let us have their entire stock of 16.16.2. Series 1 Mixers which we are offering at an astounding once only price of £1099 + VAT (Below actual trade!)

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ARP AXXE, CV/gate, pitch-bend, modulation, mains lead, £70 ono. Or swap for for MC202, Tel: (0254) 823871 after 6pm.

CASIO 1000P, vgc, 1000 sounds, home use only, £110, Tel: (0827) 60243.

CASIO CZ1, home use only, mint cond, £525 ono, Tel: (0245) 460180.

CASIO CZ101, £130; Roland TR505, £140, or £265 for both, Tel: Folkestone 41880.

CASIO CZ101, £140; MT32, £295; Korg Poly 6, £160. Or swap all for D10, Tel: (06333) 65758, eves.

CASIO CZ101, £150; Roland TR505, £150; Hybrid Arts EZ Track +, £25. Chris, Tel: Telford 613358.

CASIO CZ101, psu, £150; Jen synth SX1000, £50; Clap unit, £25, Tel: 021-308 4775.

CASIO CZ101, SZ-1, good cond, £150, Tel: Hull 26124.

CASIO CZ1000, £250; Yamaha RX21, £120; QX21, £150 ono. All mint, boxed, immac. Jaysen, Tel: (0323) 21274.

CASIO CZ1000, boxed, manuals, psu, £200, brillant piece of hardware, Tel: (0245) 467 470.

CASIO CZ1000, boxed, £210; Juno 106, cased, £375 ono. Gavin, Tel: 041-339 1452 after 6pm, Mon-Fri.

CASIO CZ1000, fully boxed, manuals, extra patches etc, £150 ono, Tel: (08995) 683.

CASIO CZ1000, vgc, hardly used, manuals available, £185. Tel: 01-845 1434, eves.

CASIO CZ1000, psu and manuals, as new, £175; Yamaha RX21, psu and manuals, exc cond. Martin, Tel: 01-571 6107.

CASIO CZ1000, multitimbral synth plus manuals, £175. Tel: (0223) 63271, X2046.

CASIO CZ3000, cased, hold, pedal, will deliver, £395. Mike, Tel: (0752) 269639, eves.

CASIO CZ3000 + RAM, as new, £280. Or swap for MKS50/80 K3/KIM. Also SZ1 seq, £80, £350 for both, Tel: Bristol (0454) 772237.

CASIO CZ3000 synth + 2 cartridges, £350; QX21 seq, £130, Tel: 061-775 5199.

CASIO CZ5000, as new, £320. Tony, Tel: York (0904) 658421, eves and w/e.

CASIO CZ5000, built in 8-track seq, immac, £350, no offers, Tel: 021-326 0072 after 6pm.

CASIO CZ5000, seq, good cond, £400 ono. Paul Taylor, Tel: (0392) 219084.

DRAWBAR multi-kbds; Hammond M102, £300 ono; WLM-HIT portable & rotary cabinet, £450 ono, Tel: (0926) 495039.

ENSONIQ ESQ1, exc cond with 32K memory expanslon, £650, Tel: Nottingham (0602) 399896.

ENSONIQ ESQ1 V3.5 + f/case + RAM, £600; Yamaha DX100, £140. Both mint, Tel: (0698) 423650.

FAIRLIGHT SERIES III, (rackmount) 14 Meg RAM, 190 Meg disk, 60 Meg streaming tape, £28,000 + VAT, Tel: (010 33) 1 3480 0571, Paris.

KAWAI K1, 2 weeks old, £480, Tel: (0494) 674692.

KAWAI K1, £490, boxed, manual etc, Tel: (0494) 674692, eves.

KAWAI K1 synth, Q80 seq, £490 each. Both as new, under 6 mths old, Tel: (0942) 897670.

KORG DP80, touch sens electronic piano, home use, £350 ono, Tel: 061-980 6140.

KORG DW6000, immac, incl f/case, £380, Tel: (0900) 602479 after 6pm.

KORG DW8000 with f/case and stand, £550 ono. Mark, Tel: (0926) 881680.

KORG POLY 800, f/case, manual; Casio AS20 monitor amp, £285. Will split, Tel: Godalming 21905.

KORG POLY 800 MK1, exc cond, + 'X' stand, £200, Tel: 051-523 6001.

KORG POLY 800, reverse keys, £210; Fostex X15 + MN15 mixer + drumbox, £180. Mark, Tel: 01-804 0056.

KORG POLY 800II, £550, with f/case; TX81Z, as new, £300. Tel: (0844) 291004.

OSCAR, latest version, MIDI mega mono-synth, manual, £200. Pete, Tel: (0923) 677360.

PROPHET 600 with f/case, £499; Casio CZ101, £115; MT32, £275. All good cond, Tel: (045) 382 2013.

ROLAND AXIS remote MIDI controller, straplock, velocity, aftertouch, £190. Ian, Tel: 01-921 4704.

ROLAND DS0, home use only, perfect cond, boxed with memory card, must sell for financial reasons. Nick, Tel: (0635) 42110.

ROLAND DS0, Roland Juno II, Roland TR505, 4 mths old, offers, Tel: (0473) 686720.

ROLAND DS0, immac cond, box and manual, £950 ono; Studiomaster 6:2 desk, £250; Aces 500X500 amp, £380 ono, Tel: 061-429 9323.

ROLAND JUNO 6, analogue, vgc, manuals, absolute bargain, £150 ono, Tel: (0228) 710256.

ROLAND JUNO 6 (MIDI/DCB), JSQ60 seq, cased, pedals, will deliver, £250 ono. Mike, Tel: (0752) 269639.

ROLAND JUNO 60 and JSQ60, £380 ono; TR909, £250 ono; Yamaha D1500, £300 ono, vgc, Tel: 021-360 3972.

ROLAND JUNO 60, exc cond, diagnostically checked/battery, £395 ono. Tel: (0704) 63234.

ROLAND JUNO 106, exc cond, £325; TB303 bassline, £80, Tel: (0602) 293000.

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ROLAND JX3P with PG200 programmer, stand and voices, £400. Tel: Hemel Hempstead 42428.

ROLAND JX3P synth and PG200 programmer, warm analogue sounds, £275. Tel: (0223) 63271 X2046.

ROLAND JX3P, vgc, £350; Casio CZ5000, as new, £400, Tel: Torquay 606632.

ROLAND JX8P, immac cond, home use only, £615. Dean, Tel: (0908) 561692, Bucks.

ROLAND JX8P MIDI programmable synth, exc cond, £450 ono; Drumatix, £50. Tel: 01-390 6639.

ROLAND JX8P touch sens synth, exc cond, £540, Tel: Rochdale (0706) 351698.

ROLAND MT32 with Dr T's editor, £400 ono, plus Casio RZ1, £100, Tel: (0305) 65558.

ROLAND MT32 plus Atari Dr T'S editor, £325; Roland PR100 plus disks, s/ware, £300, Tel: (0992) 550916.

ROLAND RD1000 digital piano, mint cond, beautiful sounds, £1500, Tel: (0706) 54138.

ROLAND SH101, £100 ono; Moog Rogue, £70 ono. Neil, Tel: (04862) 62017.

ROLAND SH101, good cond, £75. Neil, Tel: (04862) 62017.

ROLAND SH101, Mono/Poly, MC202, CX5. Serious offers only. Ian Taylor, Tel: Keighley (0535) 664124, W.Yorks.

SEQUENTIAL PRO ONE; Casio SK100 sampler, £75 each. Swap QX21? Offers, Tel: (0208) 75090, Cornwall.

SEQUENTIAL PROPHET 600 synth, MIDI, case, £450; Yamaha FB01 module, £100, Tel: (0592) 774966.

SIEL DK80 touch-sens polysynth, £295 ono; Yamaha CX5, large kbd, seq, £200, perfect, Tel: (0924) 364703.

SIMMONS SDE digital synth module, £100; MIDI synchroniser, £40, Tel: Darlington (0325) 466826.

TECHNICS PCM digital piano PX7, mint cond, £950 ono, Tel: 01-688 2873.

UNIQUE MASTER KBD/seq, fully programmable, ideal for MT32 etc, velocity sens, aftertouch, £325, Tel: (0992) 550916.

VISCOUNT CL40 classical organ, some theatre sounds, 2X56 kbds, 27 pedals, £450, Tel: 01-950 2882, Watford area.

YAMAHA CP70B, £960; Yamaha DX7 Mkl, £675; Yamaha TX81Z, £285, all immac, Tel: 051-356 0019.

YAMAHA CS80 synth, perfect cond, £400; Sequential Drumtraks, £200, Tel: Hastings 423328, eves.

YAMAHA DSR2000, as new, £500, Tel: (07842) 57254, eves.

YAMAHA DX5, 100s voices, f/cased, £900 ono; KX5, £150; RX17, £150, Tel: (0908) 617695, eves.

YAMAHA DX7, £600; Yamaha REX50, £235; Alesis Micro limiter, £60, Tel: (0482) 42461.

YAMAHA DX7, Atari editor + 100s voices; TX81Z, both home use only, reasonable offers. Graham, Tel: 01-589 5111, ext 3636.

YAMAHA DX7, exc cond, £750 ono, Tel: Brentwood 212541.

YAMAHA DX7, good cond, £600; CZ101, £125, Tel: Weston (0934) 413296.

YAMAHA DX7, ROMS, 256K RAM, Volume pedal, breath control, MAY

deliver, £575. Paul, Tel: (0603) 783351/ (0923) 246488, X228.

YAMAHA DX7, vgc, 700+ voices, tutor book, lead, headphones, ROM, £600. Steve, Tel: (0604) 700545, after 6pm.

YAMAHA DX11, with case, £400; RX5, £550; RX11, £199; RX21L, £60. Tel: (0792) 589296.

YAMAHA DX21, £325; Roland JX3P, £295; Yamaha QX5 8-track seq, £195: Paul, Tel: 01-898 6116.

YAMAHA DX21 complete with breath control and f/case, good cond, £350, Tel: (0925) 415702.

YAMAHA DX27, good cond with manuals and library, £315 ono, Tel: (04862) 62017.

YAMAHA DX27 with 5-star case, £300; Korg Poly 800 with case, £180. Pete, Tel: 01-991 1438.

YAMAHA DX27, perfect cond, year old, boxed, manuals, etc, £280 ono, Tel: (0245) 48619.

YAMAHA DX100, good cond, £130. Write: M Nijs, 72 Danger Lane, Moreton, Wirral, Merseyside, L46 8UQ.

YAMAHA DX100, exc cond, plus new carrying case, £260 ono. Tel: (029 671) 2411.

YAMAHA DX100 synth, £200; Yamaha RX17 d/machine, 8mths guarantee, £180, Tel: (0934) 621965.

YAMAHA DX100, home use, as new, boxed, manuals, £150. Tel: Leighton Buzzard (0525) 240426, eves.

YAMAHA DX100, boxed, as new, £180. Paul, Tel: 01-505 0637.

YAMAHA KX5 MIDI controller kbd, shoulder strap, soft case, £155. Tel: Guildford 576680.

YAMAHA KX88 + f/case, vgc, £1175 ono; Two 2X2 wedges, £55. Robin, Tel: 01-965 7082.

YAMAHA FB01, £130; RX17 drums, £165. Swap both for TX81Z, Tel: (0305) 775733.

YAMAHA FB01 sound generator, unused, under one year old, £180. Mr Mayo, Tel: Redhill (0737) 772480.

YAMAHA PSR70, programmable 3-track rhythm percussion orchestral, solo, RRP £699, as new, £400, Tel: (0494) 30077.

YAMAHA PSR70, volume pedal, stand, adaptor, superb cond, £400, Tel: Wallingford (0491) 38878.

YAMAHA SK30 analogue polysynth, £150; Yamaha CE20 FM synth, £50, both exc cond, Tel: Leeds (0532) 864129.

YAMAHA TX81Z, £250; Casio CZ101, £145, all boxed, home use only, Tel: Eastdean 2086, Eastbourne area.

YAMAHA TX802, 9 mths old, £850; Yamaha RX5 + RAM 4, £650; Yamaha QX5, 9 mths old, £185; Dynamix 12.2, £199, Tel: (0246) 204291.

Sampling

AKAI S900, latest s/ware, 40 disks, £900; VP70 hi-fi video, Tel: (02576) 2609.

AKAI S700 with 16 memory board, £450, Tel: 061-998 3494.

AKAI S612 sampler, boxed, Akai AX73 kbd, £300 each, Tel: Leeds (0532) 600963.

AKAI X7000, boxed, £515; Roland SH101, cased, £95; 120W PA plus speakers, £210, Tel: (0745) 39858, North Wales.

BEAUTIFUL CASIO SK1 sampler, traditional black plastic finish, £29 or swap for Fairlight. Steve, Tel: Sheffield (0742) 306854.

CASIO FZ1, 40 disks, £875; SPM 8:2, £200; Philips 2000 VTR, £40, Tel: 091-510 8956, swaps.

ENSONIQ MIRAGE DSK, MASOS, OS 3.2, library, exc cond, under warranty, £750. Paul, Tel: (0222) 887757.

ENSONIQ MIRAGE, manuals, Masos, library, perfect cond, under warranty, 3.2 Op.system. Paul, Tel: (0222) 231700.

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KORG SQ8, mint, £100 or p/x for MIDI drum machine or expander. Paul, Tel: 01-952 8688.

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ROLAND MC500 seq, perfect cond, incl manuals, £550. Paul, Tel: 01-751 0280, eves.

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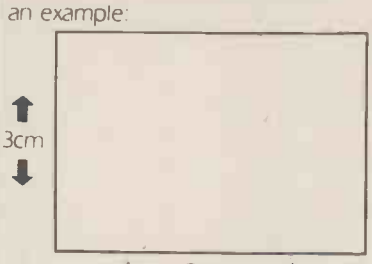

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Digital Audio Concepts, DASH and PD Formats, Analogue/Digital Recording, Processing, Mixing and Editing Automation and Synchronisation, MIDI and SMPTE Time Code, Computerised Sound Mixing Consoles, Analogue/Digital Sound Synthesis and Sampling, Working with Various Bands and Individual Artists, Music Writing, Song and Orchestral Arrangements, Radio Jingles and Commercials, TV/Film Sound Tracks, Local Radio Operation, Introduction to Pop Promo Production, Business Practice in Music Industry.

Three-Month Intensive or Six-Month Part-Time CERTIFICATE Courses in ANALOGUE SOUND RECORDING AND PRODUCTION

Modern 24-Track Sound Recording and Production, Introduction to Digital Audio, Analogue/Digital Sound Synthesisers and Sampling Keyboards, Studio Work with Bands and Individual Artists, Music for TV and Film, Song Arrangements for Record Release.

DIGITAL SOUND RECORDING AND PRODUCTION TECHNOLOGY

Digital Sound Recording, DASH and PD Formats, Digital Multi-Track Operation, Sony PCM-3324 and Mitsubishi X-840, Rotary Heads, Digital Recording, tapeless Recording, Audiofile and Synclavier, Digital Synthesis/Sampling including FAIRLIGHT, Digital Audio Processing mixing Electronic and Manual Editing, Computerised Sound Mixing Consoles, Automation and Assignable Consoles, MIDI and SMPTE Time Code their Practical Application in Creative Music Production, MIDI Controlling Networking, Triggering and Sequencing, ATR/VTR Synchronisation.

CREATIVE MUSIC RECORDING AND PRODUCTION TECHNIQUES

Music Notation and Song/Music Writing, Rock, Funk, Jazz, Soul, Reggae, TV/Film Theme and background Music, Song and Orchestral Arrangement Technique, Arrangements for Strings, Brass Section, Woodwind etc, Creative use of Instruments and Microphones, Working with Bands and Individual Artists, Recording Vocals and Choirs, Local Radio Operation.

Many Former Students are now employed in TV/Video and Audio industries.

MEDIA PRODUCTION SERVICES
BON MARCHE BUILDING, 444 BRIXTON ROAD, LONDON, SW9 8EJ
Tel: 01-737 7152 01-274 4000, Ext 328.

Every bit a musical instrument

The SDX is a dedicated music computer. Up to 88 seconds of sampling with true 16-bit resolution at the outputs, 64 tracks of sequencing, on-screen sample and sequence editing, SMPTE—it's all on board.

Play the SDX, either from a MIDI keyboard or "Zone Intelligent" drum pads, and you'll discover a truly responsive musical instrument. Saxes that scream when they're loud and whisper when they're quiet. Crash cymbals that you can choke. A piano with a loud pedal that really works.

Use the SDX as a stand-alone music production system and you'll discover an instrument that's a dream to use. Pull-down menus, on-screen cut and paste sequence editing, tape transport-type controls.

So take a look at the power of the SDX and remember, you won't need another computer to unleash it.

Keyboards

- 16-bit user sampling—up to 88 seconds at 44.1 kHz.
- 16-voice polyphony.
- 16 programmable splits.
- 9 samples per split.
- Pitch bend by split
- Layering of up to 16 sounds.
- 16 programmable tracking filters.
- 64 programmable LFOs (routed to pitch, amplitude, filter cut-off and pan).
- 96 5-point envelopes (6 per voice) controlled by dynamics and MIDI note.
- On-screen sample editing with real-time loop editing, including crossfade and backwards/forwards looping.
- 16-channel stereo audio mixer.
- MIDI.
- SCSI.
- Supports 16-bit MIDI sample dump.

Sequencer

- 64 tracks assignable to internal voices or external MIDI instruments.
- Tape transport-type controls.
- On-screen editing—clear/cut/copy/paste/merge/transpose.
- Punch-in/overdub/workloop.
- Playback quantization (note on –1/384 ppqn resolution).
- Automated 16-channel mixer.
- SMPTE – stripe/sync/offset sync/chase/lock/drop frame.

Drums

- 16-bit user sampling – up to 88 seconds at 44.1 kHz.
- Up to 9 samples assignable per drum/cymbal – 3 positions at 3 dynamic levels.
- 16-voice polyphony with assignable voices per drum.
- 16 dynamic key triggers – 16 "Zone Intelligent" pad inputs.
- On-screen sample editing with real-time loop editing, including crossfade and backwards/forwards looping.
- Hi-hat pedal input for open/close/sizzle operation.
- Cymbal choking.
- On-screen drum and cymbal building.
- 16 channel stereo audio mixer.
- MIDI.
- SCSI.

System

- Each SDX console is complete with operating software that simultaneously supports keyboard, sequencing and drum applications.
- Expanding sound library includes 100s of keyboard and drum samples.
- Memory upgrade options: 2/4/6/8 Mb RAM – 20/70 Mb internal hard disk drive.

S D X

SIMMONS

Simmons Digital Music Limited, Alban Park, Hatfield Road, St. Albans, Herts AL4 0JH
Tel (0727) 36191 Telex: 291326 HEXDRM G Fax: 41755

Vision Becomes Reality. The M1 Music Workstation

Every once in a while someone comes up with a better product. Less often, a company creates a better product that changes the entire nature of the music industry. The M1, a digital synthesizer/rhythm programmer/sequencer/multi-effects workstation, was conceived as a powerful tool that not only helps creative musicians express their ideas in the most complete form, but also becomes one of the most expressive and versatile performance instruments ever built.

Power To Perform

The M1 brings a new level of power to live performance with 2 megawords of ROM. Every one of the Programs and Combinations (up to 100 of each) is ready to play *instantly*. There's no loading time, because there's no loading. Nothing else gives you sounds this good, this fast.

The 61 note velocity and aftertouch-sensitive keyboard includes extensive parameter voicing that puts literally unlimited performance power in your hands with features like layers, splits and eight way zones across the keyboard.

Power To Produce

The heart of M1's power is 4 megabytes of 16 bit PCM ROM with multisamples of pianos, strings, brass, voices, guitars, attack transients, waveforms and much more.

M1's full-function drum machine has over 42 internal drum and percussion sounds that can be grouped into four user-defined drum kits.

Give extra dimension to your sounds with M1's 33 digital multi-effects including reverbs, stereo delays, panning chorusing, a digital exciter, distortion and more with a choice of four effects per program or combination independently routable to the four polyphonic outs.

Put an entire musical composition or arrangement together with M1's comprehensive 8-track sequencer with song position pointer, phrase and linear based recording, dynamic voice allocation, as well as single event editing.

And M1 power is designed to grow with you: RAM card memory stores extra sequences or programs. And there's an expanding sound library on ROM cards.

Let M1 power turn your ideas into realities. See your authorized Korg Dealer to find out more about the M1 Musical Workstation.

KORG (UK)

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Elmgrove Road, Harrow,
Middlesex HA1 2YR.
Telephone: 01-427 5377