APRIL 1986
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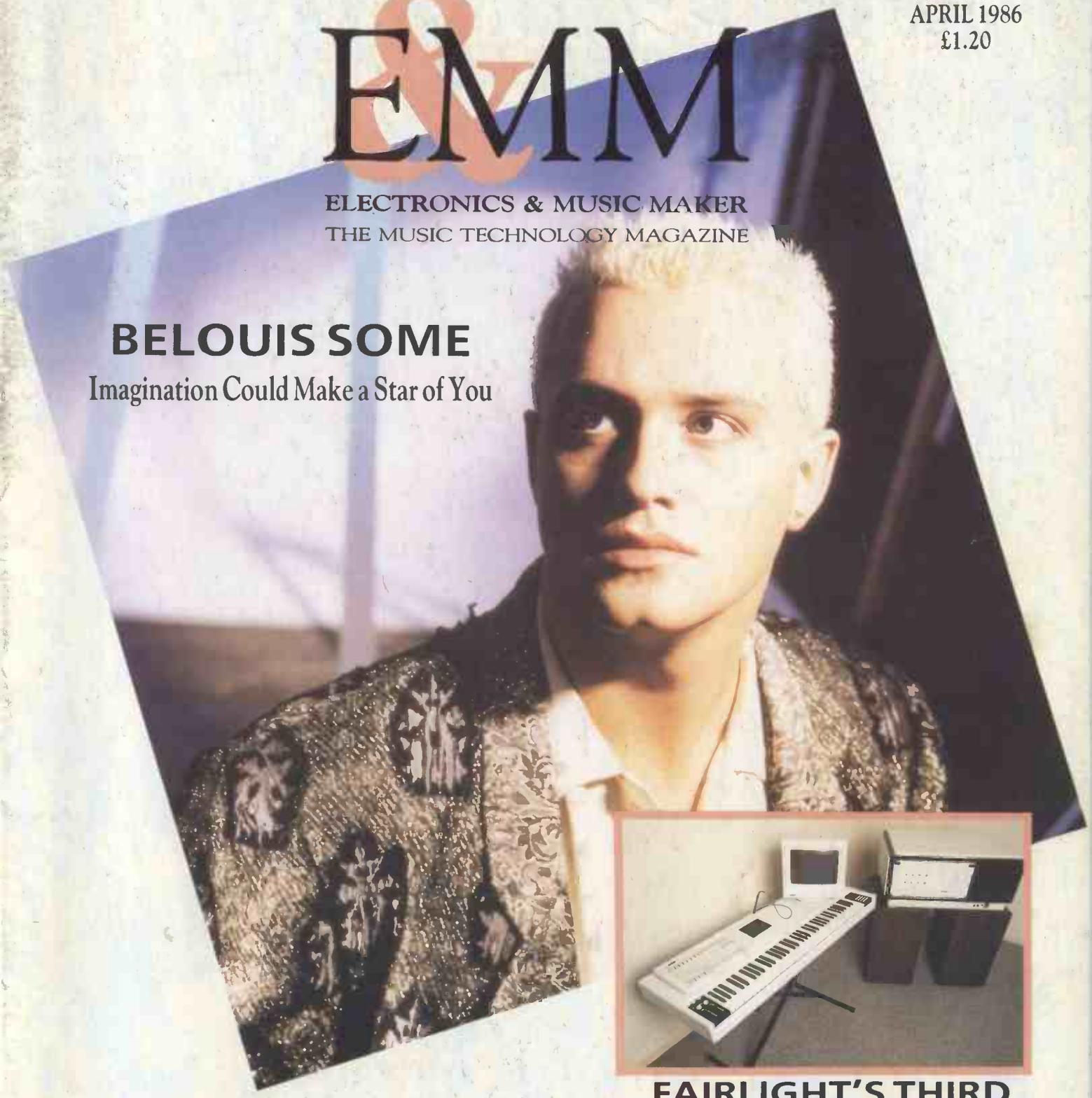
E&MM

ELECTRONICS & MUSIC MAKER
THE MUSIC TECHNOLOGY MAGAZINE



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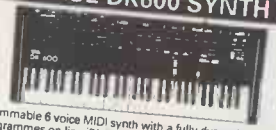

Programmable 6 voice MIDI synth with a fully dynamic keyboard. 95 programmes on line. Digital/Analogue converter gives every sound from fat to bells. You won't find a better bargain than this. Few only to clear.

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A baby Baby Grand Piano, 46" wide and only 35" front to back. The Chase Baby Grand has 12 presets of Piano, Electronic Piano and Synthesiser sounds. The Filter control gives you a dozen variations to the presets. And if you want to change any of the presets, a trapdoor on the front panel opens up to allow you to program your own bank of sounds. The keyboard touch response is adjustable to suit your hands. A built-in Tremolo and Detune feature let you make concert sounds from an elegant portable. It has a built-in amplifier (40 Watts R.M.S.) which gives enough power to play the Baby Grand on every occasion where an outside amplification is not available, and it can also accomodate an external instrument, and even a microphone. It weighs about 1/4th of the weight of a large piano.

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The new budget version of the world famous DP80, the DP30 offers four families of Piano sounds ranging from a mellow tine piano to many important synthesizer sounds. You simply select a family and alter it to suit your taste, by changing the Filter Sensitivity control on the front panel. You can also add Chorus and change the Bass and Treble controls. One master tuning knob. The dynamic range of the keyboard goes from subtle to powerful with the professionally tailored action.

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CHASE DP80 PIANO

12 incredible Piano Voices, the ability to create your own and a keyboard response you can tailor to your touch.

THE VOICES. Sit down at the Chase DP-80 and you'll discover the world's most popular pianos are at your fingertips. Six presets function in two modes, the first six being more traditional acoustic and electric piano sounds, the second six offering more brilliantly defined sounds not normally associated with acoustically oriented instruments. FREE SECTION. The seventh preset enables you to control the very special Free Filter Section. This section lets you create your own piano sounds, plus many expressive synthesiser voices individually coloured by the energy you direct into the keyboard. THE FEEL. The DP-80 has a true dynamic keyboard that you can adjust to suit your style and touch. You don't have to conform to it, the DP-80 conforms to you.

R.R.P. £1049
CHASE PRICE £749
SPECTACULAR
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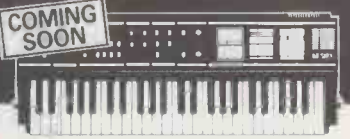
SAVE £600

CHASE DK70 MIDI SYNTH

COMING SOON



It incorporates a 2-track real time polyphonic MIDI sequencer with a memory of up to 300 notes. It is fully programmable and features 50 memory slots with complete MIDI features. This internal memory is expandable with the optional RAM/ROM cartridges to give you up to 150 programmes on line. The double sound generation gives you those extra warm, thick sounds. With Detune, Pitch Bend, Pink Noise and Chorus, the world of sounds is at your fingertips.

Additionally you have a fully dynamic touch sensitive keyboard to inject that extra feeling.

R.R.P. £549
INTRODUCTORY
OFFER
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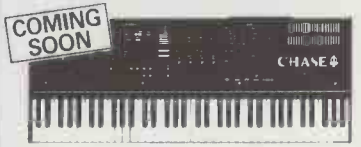
SAVE £200

CHASE BIT MASTERKEYBOARD

COMING SOON



The hit of the Frankfurt Show. The Keyboard Players Masterkeyboard. Fully weighted with dynamics, aftertouch, two split points, transposition et al, it incorporates a powerful 4000 note 4-track sequencer. MIDI in/MIDI through and 2 'real' (not parallel) MIDI out channels – giving you instantaneous response. But above all the beauty of the Bit Masterkeyboard is what is a bug bear in many lesser instruments – control of up to 16 synth modules, with full status reporting, simple addressability and no hassle. It tells you what is going on in a flash, it makes adjustments simple – allowing you to play at your best. The power is devastating – the price is incredible. Order yours today.

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CHASE DK80 SYNTH

This dynamic, bitimbric stereo synthesizer with built-in sequencer is a revelation. The DK80 has 12 voices and is packed with excellent features such as double sound generation, fully dynamic touch sensitive keyboard, a 2 track polyphonic sequencer, user definable split point and MIDI. An outstanding professional's instrument at an incredibly low price.

R.R.P. £799
CHASE PRICE £599
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CHASE DK700 MASTERSYNTH

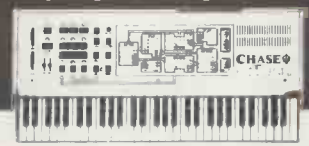
COMING SOON

This value packed keyboard is a MIDI Masterkeyboard with built in synthesizer and many unusual new features including rolling split points and four sound rolling patches. Touch sensitive keyboard, 73 programmes on line, it allows independent control of up to 4 slave MIDI units or 16 synth modules as well as the clock of a MIDI sequencer. An excellent partner and controller for all MIDI synths and modules.

R.R.P. £1299
INTRODUCTORY
OFFER
£799

SAVE £500

CHASE BIT 99 SYNTH



The top selling synthesizer with the top selling sounds. Digital access control combined with analogue filtering gives that extra warmth and versatility. Add touch sensitivity, the ultimate in sound selectivity, memory, white noise, splits, doubling, detune etc. – all programmable and MIDI and you've got to be talking about the Chase Bit 99. Undoubtedly the tops for sound, the tops for value.. Now you've no excuse to finish up with a second rate synth.

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R.R.P. £499
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Contents

E&MM April 1986 Volume 6 Number 2

Comment

TECHNOLOGY FOR THE COMMON MAN

Five years ago, when E&MM was in only its second issue and most people associated the term 'synthesiser' with huge sprawling networks of leads and dials that looked more like telephone exchanges than musical instruments, there was a yawning gulf between what state-of-the-art music technology could offer, and what the average musician could actually afford.

In 1981, the princely sum of £199 (including VAT) would have bought you the extremely worthy – but unquestionably basic – Wasp monophonic synthesiser. There *were* such things as sampling instruments and digital sequencing packages, but at selling prices of around £20,000, they weren't exactly within easy reach of the musician in the street. The difference between the affordable and the ultimate wasn't just a difference of scale, but one of concept. The Fairlight of 1981 didn't just do things better than run-of-the-mill electronic instruments, it did things that had an entirely different technical and musical purpose to them.

In 1986, Fairlight have unveiled the logical successor to those early systems, the Series III CMI. As you'll read elsewhere in this issue, its price is high, its specification state-of-the-art, its range of facilities almost unrivalled. It will record external sound sources, store them digitally, and reproduce them as faithfully as today's technology will permit. It will allow you to utilise those sounds as part of complex musical compositions, all of them assembled within the machine itself. And it will mate beautifully with hundreds of other electronic instruments, incorporating their systems within its own to produce a musical network of even greater sophistication.

But there's nothing really *new* about the new Fairlight that isn't a refinement of established principles. The Rhythm Composer is simply a revamped Page R, the sampling facilities are merely orders of magnitude better in quality and quantity than their predecessors, and the CAPS composing/arranging software, when it appears, will be no more than the Australians' interpretation of what a state-of-the-art music composition system should be.

In short, the Fairlight Series III has come about through a process of evolution, not revolution. It's an astonishing machine, full of cleverly written software that presents itself in an attractive and accessible way, so that above all, the new CMI is vastly more *usable* than the technology of five years ago allowed its ancestors to be.

But the concepts that are the new Fairlight's building blocks are little different to those used by many downmarket instruments like, for example, the Casio RZ1 sampling drum machine also detailed in this issue. Next to the Fairlight, the Casio's sampling sound quality is poor, its composing facilities very limited, and its interfacing potential restricted. But for £350, the RZ1 offers precisely the same combination of basic features as the CMI, in a much cruder but also much more affordable package. Five years ago, such a state of affairs would have been unthinkable.

PPG's new Realizer, another of this month's featured instruments, provides more of a contrast between the simple and the sophisticated. In the Realizer, the Germans have succeeded in producing a music system in which even the basic building blocks can be altered, moved around, and swapped about by the user. No other machine offers programmers a chance to create entirely new methods of sound-creation by writing new software, and that in itself has only come about because technology has advanced in the direction it has.

But it could be argued that even the Realizer represents no more than the logical extension of existing ideas. Its routing facilities, for instance, are simply a more versatile, software-based version of what used to be possible with the telephone exchange systems I mentioned at the start, and what Oberheim have continued to develop with their Matrix Modulation System.

And the Realizer's manipulation of software techniques is being copied by the Japanese even as the Germans are putting the finishing touches to their £40,000 wonder-machine.

Akai's new S900 sampler will offer disk-based software that will transform into a sinewave synthesiser, while Yamaha's SPX90 multi-effects processor is a prime example of how much flexibility can be wrought from simple electronics, if enough of the machine's operating system is based in software. There seems no reason, either, why Japan's new software-based resynthesis systems – such as Roland's SAS – couldn't be used in a broader context than the electronic pianos they're presently being employed in.

It's fairly clear, then, that the gap between the affordable and the state-of-the-art *is* narrowing, and fast. That won't signal the demise of all the upmarket companies, however. Because just as there will always be people who want a car that runs quieter, smoother and quicker than a Ford Sierra and will willingly spend the extra on a Jaguar, so there will always be people who need a musical instrument that is more sophisticated than a Casio RZ1, and who will gladly fork out something in the region of £50,000 for a Fairlight or a PPG.

Then again, maybe the final nail in the coffin of the upmarket companies lies behind the Iron Curtain. As this issue's exclusive profile reveals, the Zlatna music technology co-operative in Bulgaria looks all set to shake the musical instrument industry to its foundations, with some new machines that really are new in both concept and execution. Astonishingly, they all seem to have a selling price of £199.99.

Will we see them in the UK? Only time and the five-year plan will tell. ■ Dg

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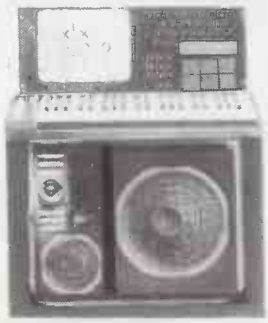

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Micros Live

In a much-needed attempt to liven up the capital's live music activity, Arts Theatre impresario and electronic music fan Dave Jones is organising a number of concerts of 'new music' in the London area this Spring.

First of these is Brian Eno's video installation – not strictly a 'live' event as such, but a long overdue opportunity to see the man's sophisticated ambient video and music system, working in the sort of environment for which it was designed.

The system is installed at Riverside Studios, Crisp Road, Hammersmith, London W6, and will be open to the public from March 26 to April 20.

Coinciding with the exhibition will be a short series of concerts by Roger Eno and Michael Brook, who'll be playing excerpts from Brook's recent 'Hybrid' album, coupled with some new material, and backed by Brian Eno's visuals. Time is 8.30pm, dates are April 17-19, and tickets are £4 each, from the Riverside Box Office, ☎ 01-748 3354.

Shortly after that, Newcastle synth composer Ian Boddy plays his first London concert at the Purcell Rooms on the South Bank. It's on May 5 (a Bank Holiday, no less) and begins at 7.30pm. Tickets are available from the South Bank Box Office on ☎ 01-928 3191, Access/Visa ☎ 01-928 8800.

You can get more info about the Boddy gig on ☎ 01-928 3002. ■ Dg

Into the Groove

Thanks to the ingenuity of a small British company, owners of Roland Juno 6 and Juno 60 polysynths need no longer be left out in the cold by the MIDI revolution.

The company in question is Groove Electronics, and their MIDI retrofit provides the Juno 6 and its programmable counterpart, the 60, with MIDI In, Out and Thru sockets, and a range of software facilities that includes Omni on/off, keyboard splitting with separate MIDI channel assignment for lower and upper portions, and recognition of patch-change and transposition data.

All the above functions are accessed via notes on the Juno keyboard, and the interface comes in one of two formats: a stand-alone PCB at £99, or a ready-installed unit, fitted to your synth, at £129.

Distribution is by the Future Music chain of retail stores, and more information can be had from any of their outlets. ■ Tg

Syco Killers

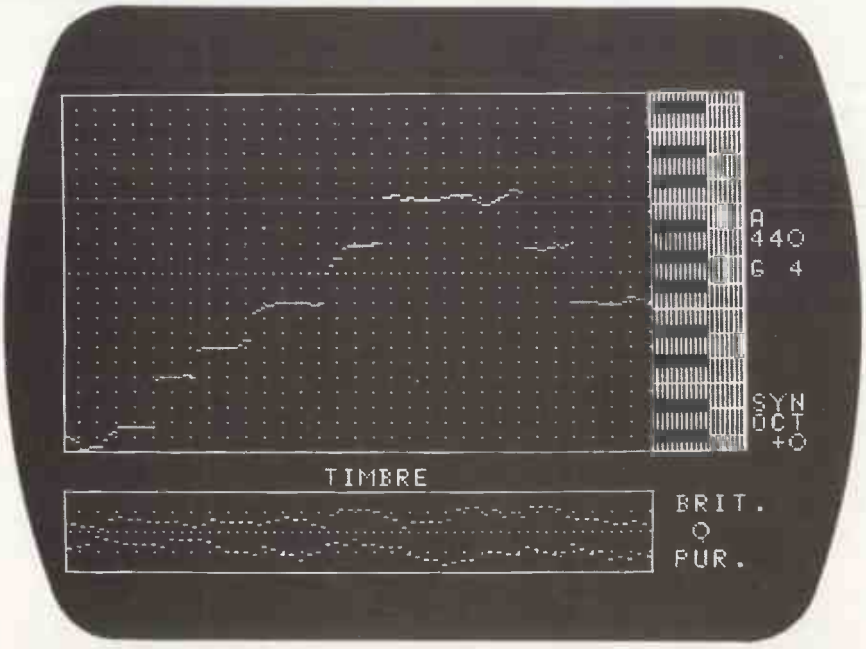
Not content with completing an elaborate and hugely tasteful refurbishment of their Central London premises, Syco Systems have sent us news of a couple of new items soon to be on demonstration there.

First of these is MIDI-Mod, product of Californian company Forte Music. As we reported in Newsdesk, E&MM January '86, the MIDI-Mod is a retrofit modification that makes virtually any piano – acoustic or electric – MIDI-compatible.

The system does its job via a panel of touch-sensitive switches under the piano keyboard, with a MIDI Out connector allowing the relevant note information, including dynamics, to be transmitted to any MIDI-equipped synth, sequencer, or whatever. MIDI keyboard-split assignments allow the musician to select different synthesiser voices to be played from different sections of the piano keyboard.

Syco have enlisted the services of a specialist company, Cristofiori Pianoforti, to handle the installation of all MIDI-Mod systems, so it looks as though your present Joanna should be in safe hands.

On now to the Fairlight Voicetracker, unveiled to the world at trade shows some while ago, but only now entering full production in Australia. The Voicetracker accepts any monophonic sound source (human voice included) as an input signal, which it then analyses for pitch, dynamics and timbre, and converts for output as either MIDI information or an analogue signal.



The machine's chic exterior houses a number of interfacing possibilities that ensure compatibility with both MIDI and CV/Gate electronic instruments, as well as computers equipped with an RS232 port. There's also a graphics output through which the Voicetracker offers a rolling display analysis of pitch, plus a selection of amplitude, timbre, tuning and metronome displays.

Fairlight claim the Voicetracker's 68008 32-bit processor ensures a previously unheard of accuracy and versatility, and if you want to check that claim out for yourself, best book an appointment at Syco on ☎ 01-724 2451, or stroll along to their showrooms at 20 Conduit Place, London W2. ■ Dg

Make That Call

A Twickenham company, Auto Ansa, are now offering bands, management people and record companies the chance to promote new releases or demo material, via nothing more elaborate than the good ol' telephone.

The service uses equipment that allows any number of telephone lines to be used, simultaneously delivering an announcement up to six minutes long. This message can include information on the act in question and a contact phone number in addition to the music, and tapes can be changed as often as customers want them to be.

Paul Bensley, the power behind this particular button, gives an example of his 'State of the Art' line on ☎ 01-891 0713, and though the bandwidth of the phone system doesn't allow really detailed listening, it does give a useful indication of what each set of musicians (one of them could be you) sounds like.

More from Auto Ansa, 28 York Street, Twickenham, Middx, TW1 3LJ. ☎ 01-892 8052 ■Tg

The Missing Link

In response to demand from musicians, Joreth Music have introduced a new program for the Commodore 64 called the Real Time Linker System. The package works on its own or as part of Joreth's existing Music Computer System, in which case it takes the place of that program's Composer section.

Briefly, the Linker is an eight-track real-time system aimed at giving more versatility to composers and songwriters chaining their material together. Each Linker track can be made up of out of as many as 16 different links, and each link can be either a complete real-time part, or a segment of a part.

A variety of looping and sub-looping facilities makes the Linker – on paper anyway – one of the most flexible composing packages yet developed for a home micro, though we'll have to wait until we get our hands on a copy before committing ourselves.

The software does look friendly, though. As an example, musicians can set their loops in terms of metronome beats, while computer buffs can define theirs using byte numbers. A blingual computer program, no less.

More from Joreth Music, PO Box 20, Evesham, Worcs, WR11 5EG. ■Dg

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Powerful transport control features such as autolocate with 2 memory locations, search to zero or memory location 1, shuttle from location 2 back to 1 plus autoplay from memory 1 or 2 are all standard features, although only normally found on more expensive professional multitrack recorders. The combination of 15 ips tape speed and Dolby C noise reduction produces a tight, clean sound that is immediately recognisable as "professional." Quite simply, the Model 80 is unique, so why not come and check it out for yourself? No appointment is necessary but a courtesy call will ensure a personal demonstration ... Make your music our business!

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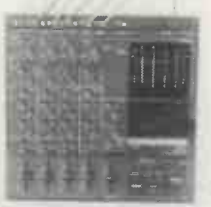

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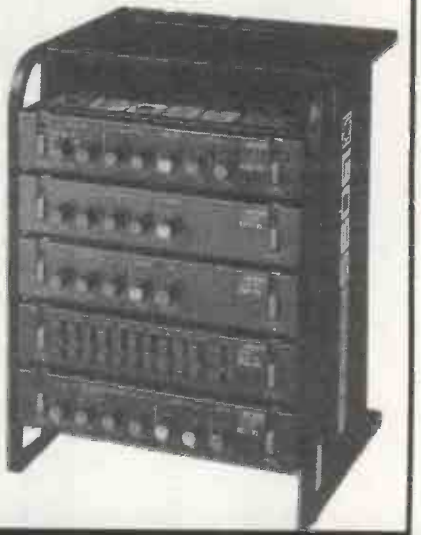

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Dear E&MM

Further Response

I am writing in reply to recent letters concerning keyboards velocity response.

Like your Mr Neville, I was brought up on the acoustic piano, and it wasn't until University that I discovered the synthesiser. I am now earning my pennies teaching music and, just over a year ago, bought myself a Roland Juno 106 – a synth without touch-sensitivity or an aftertouch facility. But I don't miss them at all; if I want to play 'with feeling' I go off and play a piano.

Why is it that people have to compare a synthesiser with a piano, rather than treating them as completely different instruments? As a regular player of organ and harpsichord, I'm used to playing a seemingly insensitive keyboard. Who's ever heard of a touch-sensitive church organ or harpsichord? By the very nature of their actions, they can't incorporate such a facility.

A pianist switching to a synthesiser should realise that he or she is approaching a totally different instrument, the only similarity being that the black and white notes are in the same order. Each requires a different style of playing.

Yes, it is nice to be able to bring in filter effects, modulation and so on depending on how much aftertouch you apply, but surely any music you write and perform is geared towards the instrument you perform it on – be it an acoustic piano, a pipe organ, a synth, or whatever?

In other words, you never miss what you've never had.

■ Mark Stewart
Bishops Stortford

Dear E&MM

Window View

After reading your features on the new Atari and Commodore micros (E&MM January '86), I feel it's about time someone pointed out that Apple were not the first to introduce the concepts of windows, mice and icons as E&MM and other comics (including so-called 'computer magazines') constantly claim.

Way back in 1964, a chap called Doug Engelbart was experimenting with lots of alternative input devices (objects to stick on your knee, up your nose, under your armpit and so on), one of which turned out to be the mouse.

In 1969 at the University of Utah, Alan Kay wrote a thesis entitled 'The Reactive Engine' in which he outlined a new 'user-friendly' method of communicating with computers that included the idea of windows. He then built the flex machine to demonstrate this, but the technology of the day wasn't really up to the job (remember those hot tubes called valves?).

Kay then joined Xerox who, in 1971, decided to develop software for the machines they estimated would be available in 1982. With the help of Larry Park, Warren Teitelman and Brian Rosen, the company developed several window managers on the Xerox PARC Alto system, the first of which was called 'Small Talk' and included many of the features we expect today – including windows, icons, a mouse and an A4-size screen.

Brian Rosen then moved to Three Rivers, who developed the PERC in 1979. This was a 32-bit single user system retaining the windows, icons and A4 screen, but having a graphics tablet instead of a mouse. ICL started selling PERC MkIs in 1981, and a joint development program between Three Rivers and ICL led to the PERC MkII, which brought the mouse back on the scene.

This short history lesson tells us that Xerox were really the first manufacturer to introduce windows, icons and mice, over ten years before Apple.

Incidentally, we still don't quite have personal computers of the kind the Xerox team estimated we would have in 1982. If we did, they'd be able to execute 100 billion instructions per second, be the size of a notebook, have a flat-panel display and be capable of running off batteries.

■ Paul Hopgood
Oxfordshire

Dear E&MM

CZ Corrections

In your article on the Joreth Tone Editor for the Casio CZ series, your reviewer has made omissions which we fear may damage our reputation.

Before pursuing our complaint, I should stress that we welcome constructive criticism and seek to promote a reputation for readiness to listen to, and act upon, well thought-out comments from users, reviewers, and rivals alike. Your in-depth review of the Joreth MCS (May '85) voiced disappointment that the Real Time Editor and the Composer Syntax Checker could not reside in memory together. Within weeks, MCSs were being supplied with an explanation of how to achieve this objective. In our new range, this matter has been taken further, as the MCS disk now includes an options utility which allows the two modules to be interchanged.

But it is not the policy of Joreth Music to provide minimal facilities in hardware or software, and the program described in E&MM March '86 is a ghost of the real thing. There was no mention of true time-scaling windows, fast copy and exchange of envelopes, attenuation of level or rate (time) for complete envelopes or single nodes within an envelope, or Sprite display of vibrato. There was only passing mention of the ability to use the Loader program within the JMCS.

As these omissions are the very features which differentiate our product from others of its kind, we feel readers may be misled about the nature of Joreth software. We do not expect E&MM to carry a duplicate of our spec sheet or to include reams of advertising copy on editorial pages. What we have come to expect is a thorough understanding of the implications of the products under review...

■ Mick Jones
Joreth Music
Worcs

Dear E&MM

Sampling Solutions

I've noticed an alarming trend in the letters published in E&MM. It seems everyone is at each other's throats.

Surely people who read E&MM know that it's a magazine specialising in 'electronic' sound generation? I don't believe I recall any article in the mag suggesting that synths are superior to acoustic instruments, so why are some readers suddenly having a go at synths? And to suggest that synths are not musical instruments because they offer less to express with is plainly ridiculous. Presumably, the majority of percussive musical instruments (glockenspiel, tubular bell, triangle and xylophone, to name but a few) would also be disqualified on the same grounds.

As for sampling machines, they have a unique facility to offer, and need not be seen as a replacement for, or threat to, the synth. Many sounds are nearly impossible to duplicate accurately using techniques, so why not sample them? Meanwhile, the synth can generate unique sounds not found anywhere else, which ensures its continuing usefulness.

Admittedly, there's little more tedious than the unimaginative use of sampling that recent charts have witnessed, but the sampler is going through the same early, crude usage as the synth did – remember all those full resonance, long-decaying VCFs? Nowadays, most synth players have realised that the best sounds are subtly constructed and take time to put together, and inevitably, the same will happen to sampling as the techniques connected with it become more familiar.

■ Steve Clark
London

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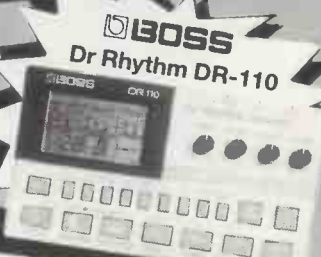

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Sycologic was formed to provide innovative new products which allow the modern musician creative freedom within the confines of today's available technologies. Three such projects are the PSP, Mi4 and M16.

The Percussion Signal Processor opens up a whole new world for the electronic percussionist. In addition to conventional pad to MIDI and MIDI to trigger conversion facilities, signal processing tasks are performed. Playing information from up to 8 drum pads and a hi-hat pedal is both digitised and regenerated, enabling the PSP to enhance a standard electronic drum kit's playability, whilst providing an advanced MIDI interface. Each pad can be assigned several performance parameters including MIDI Program, Note, Gate Time, Pitch Bend, 'Feel' and Channel. These may be adjusted independently or selected from a bank of 50 user-definable Patches. To assist live playing, Patches may be selected remotely from the drum pads allowing the drummer to select new configurations without touching a button. In addition, sound processing software has been included to allow dynamic MIDI events to be generated from sound sources connected to the pad inputs. Considering all of these advanced features the PSP must be the key component of any 'state of the art' percussion set-up.

As the number of instruments incorporating MIDI increases, the problem of interconnection becomes more of a nightmare. A solution can be found using Sycologic's MIDI Matrix switchers. These unique devices reduce the limitations encountered with MIDI 'Chain Networks' allowing instruments to be configured at the touch of a button.

The Mi4 is a 4 by 4 Matrix which allows any one of 4 MIDI Sources to talk to any combination of 4 MIDI Destinations. Connection points on the Matrix are made digitally by selecting the required Source and Destination buttons, or remotely, using the optional Mi4R infra-red transmitter. A connection is indicated by an LED at the intersection of the lines on the Matrix. The presence of MIDI data is also indicated by LED's in the Source switches. To make the Matrix clear and simple to use, white squares have been provided opposite each button allowing the connected instruments to be labelled.

For configurations of more than 4 machines, the M16 presents an ideal solution. This new device is in the form of a 16 by 16 Matrix, but with provision for the connection of 2

Specifications are subject to change without notice.

Expander modules allowing the system to be enlarged to 16 by 32, or 16 by 48. Matrix connections are made via a numeric keypad on the remote control panel, the patch being displayed on a 40 character by 2 line LCD. The remote panel is connected to the rack unit via a single lead allowing all the bulky MIDI connections made to the rack to be situated out of sight. Up to 32 Matrix Patches may be stored and recalled, allowing a complete Studio to be reconfigured in seconds. Patches may be changed from the remote panel or by a MIDI Patch Change from one of the 16 Source instruments. Each Source and Destination has an 8 character label which is displayed along with its number during editing. These labels can be assigned with the name of the instrument connected, saving the need to constantly refer to what machine is connected where. Another useful feature of the Matrix is its ability to send pre-assigned Program Changes to any Destination when a new Matrix Patch is selected. This allows one MIDI Patch Change from the Master instrument to configure not only the connections of the Matrix, but also the Programs of all the instruments connected.

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Interface

Your questions answered by E&MM's resident team of experts. If you have a query regarding any aspect of music technology, send it to Interface at the editorial address.

Q *I'm writing to you about synchronising my SCI SixTrak via MIDI to a drum machine which is within my budget of around £200. I have hardly any money and wouldn't like to waste it.*
■ **Steven Ellis**
Portsmouth

A *Know what you mean. The SixTrak's internal sequencer will synchronise with any MIDI drum machine. Fortunately, the price of technology has fallen considerably during the last year, and you can now buy a reasonable MIDI drum machine for under £250. The obvious candidates here are Yamaha's RX21 and the new Roland TR505, which we hope to be reviewing soon. The Yamaha – and its Latin percussion equivalent, the RX21L – have an RRP of £249, the Roland an RRP of £225. Any of these should work fine with your SixTrak.* ■ **St**

Q *I'm a proud and happy owner of an Acorn Music 500. I'm also a lonely owner of an Acorn Music 500. Is there some sort of users' group? Could you also tell me what's happened to the MIDI interface, music keyboard and custom amp? I've yet to see any reviews or adverts.*
■ **Chris Nobbs**
Aylesbury

A *Your loneliness is at an end. There's an AMPLE users' group run by Nigel Sixsmith, who may be contacted at 18 Blackmead, Orton Malbourne, Peterborough PE1 0PU.*

As for the new products, the interface will be available in the Summer, the keyboard and the custom amp towards the end of April. You will, however, also need to purchase a Music 500-to-5000 upgrade kit before you can use these. The Music 5000 is the latest of Hybrid Technology's music systems. It'll be ROM-based, MIDI-compatible, and feature improved hardware and advanced music software. Incidentally, the company have asked us to point out that the Music 500 won't work with Acorn's new BBC Master 128 computer, thanks to the 1MHz bus connection on the 128 being slightly different to that on the Model B series. The 5000 system has, however, been written to take full advantage of the Master 128. ■ **St**

Q *Flicking through your free classified ads each month, it's occurred to me that buying secondhand is a viable alternative to purchasing a new synthesiser. Can you tell me the pros and cons of going for a pre-owned instrument, rather than buying something new and 'off the shelf'?*
■ **Doug Gray**
Croydon

A *Despite the ever-rapid march of technology and the downward price spiral that comes with it, buying a secondhand synth is still worth considering for the impecunious. It has the obvious advantage of causing a smaller initial dent on the wallet, and if you do buy used, you're automatically less vulnerable to the ravages of planned obsolescence.*

That said, a secondhand musical instrument rarely carries a warranty valid for more than about three months, so you run the risk of being lumbered with a faulty machine nobody will pay attention to without receiving sizeable payment.

To minimise this risk, look out for instruments that are genuinely 'never gigged', that have a good service history, or simply give the impression of having been well looked-after; unlike cars, for example, synths usually bear obvious scars if they've been mistreated at some stage.

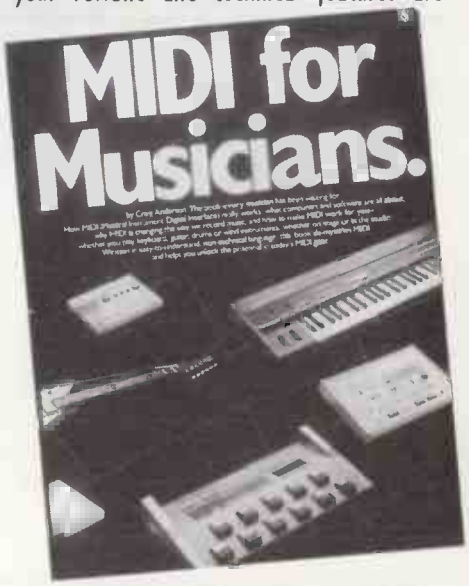
Look out, incidentally, for a more comprehensive guide to investing in secondhand music technology in a future E&MM. The subject is too complex to cover in a few sentences. ■ **Dg**

Q *A couple of questions for you overworked hacks. Is there any Mirage Visual Editing software available, or being developed, for the BBC B micro? And could you tell me if there's an Ensoniq Users Club in the UK?*
■ **Ivan Whetton**
Cumbria

A *Neither Ensoniq UK nor ourselves have heard of any package for the BBC. Perhaps if someone's beavering away right now they'll let us know.*

There isn't an Ensoniq Users' Club at present, but a certain Matthew Newman is interested in forming one. Matthew can be contacted at 2 Walnut Tree Cottage, The Green, Frant, nr Tunbridge Wells, East Sussex TN3 9DE. ■ **St**

Q *I enjoy your magazine's coverage of the Musical Instrument Digital Interface, but while the details in your reviews and technical features are extremely valuable, I'd dearly love to get hold of some form of MIDI reference book. Could you tell me if there are any books available on MIDI?*



■ **Rob Simmons**
Oxford

A *As luck would have it, such a book has just arrived at the E&MM offices. It's called 'MIDI For Musicians' and is written by Craig Anderton, author of books on electronic projects and home recording for musicians, and editor of 'Electronic Musician' magazine in the States. We'll be reviewing the book in due course, but from what we've seen so far, it appears to be clearly written and well thought-out. Chapters include 'The Evolution Towards MIDI', 'The Computer/Instrument Connection', 'MIDI Applications' and the 'The MIDI Studio'. Included at the back of the book is a copy of the official MIDI 1.0 spec. 'MIDI for Musicians' is distributed by Music Sales, and carries a £9.95 price-tag.* ■ **St**

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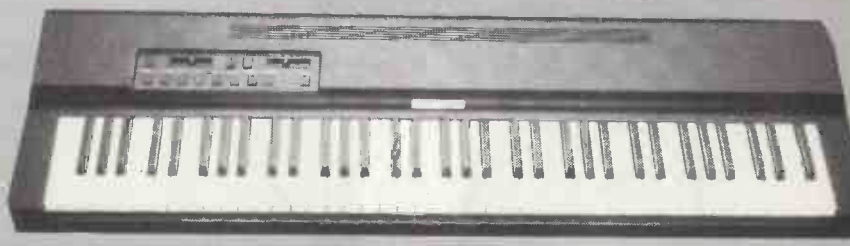

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WIN

Toa's Headset Mic and Monitor Speakers

AFTER THE HUGE POPULARITY of the wordsearch puzzle in E&MM's new-year Quiz of the Decade, we decided to tax your minds with a second, similar game. This one's in the shape of the distinctive Toa logo, and the first bunch of all-correct entries we pull out of the hat after the closing date will receive Toa equipment as reward for their endeavours.

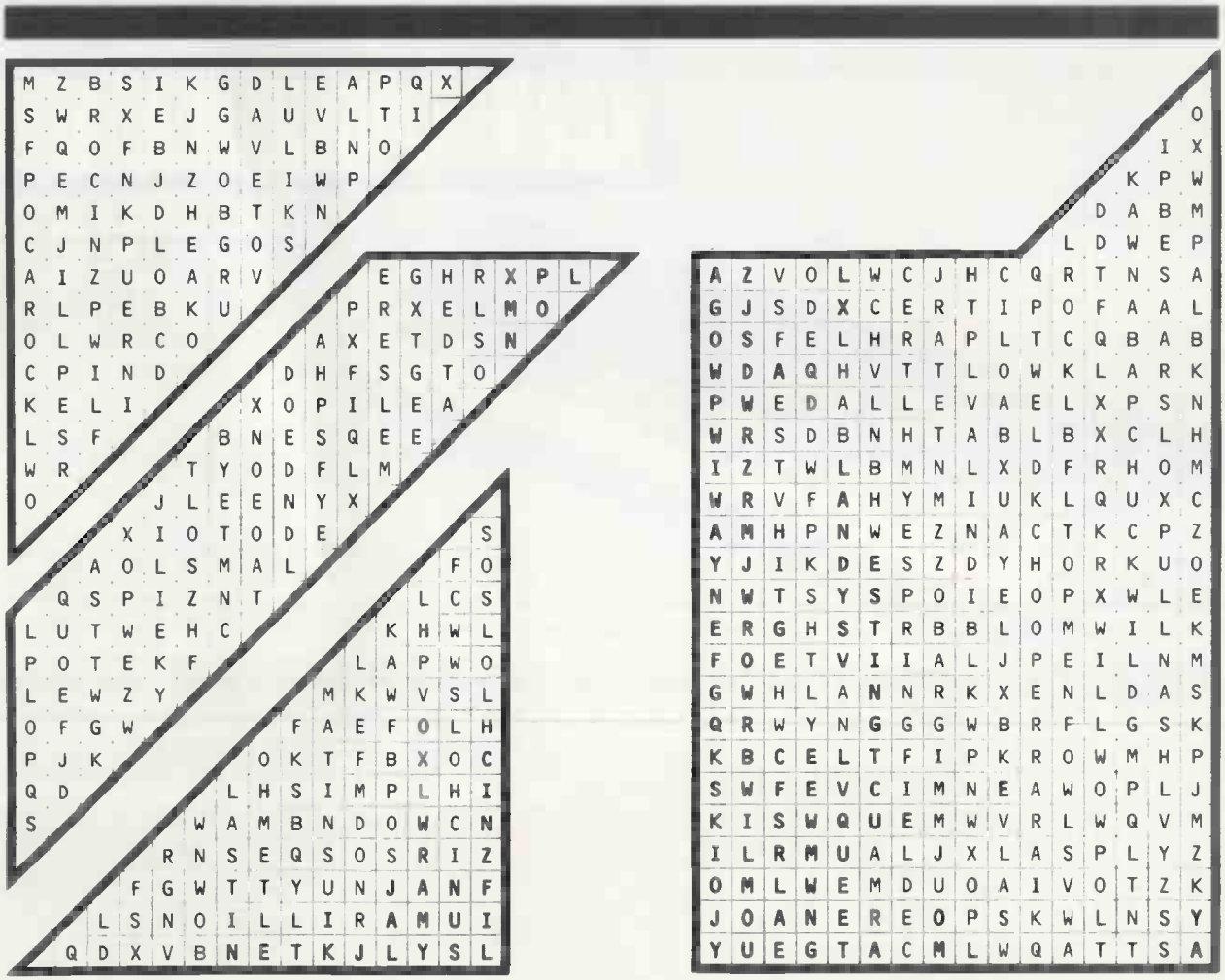
FIRST PRIZE IS THE TOA HY1 headset microphone, a fine on-stage device combining the functions of headphones and mic in one package. It's especially useful for keyboard players who want to hear themselves sing (or just talk) while playing on stage, and comes with three alternative mic capsules for male vocal, female vocal and communication uses. The built-in stereo headphone monitoring system can be used either with an individual mic output, or at line in signal level. A Mute button allows the user to speak freely with other members of the band or with the audience at any time, and the whole HY1 system carries an RRP of over £400 – so it's no mean prize.

If you don't win the HY1, you still stand a chance of picking up a pair of Toa RS21M mini monitors as consolation. The speakers have a maximum power handling of 100W and are therefore well suited to live, studio and broadcast monitoring applications, yet are compact enough to fit onto the front seat of a Mini Metro. They normally retail at around £75 per pair, but we've got two pairs to give away.

TO STAND A CHANCE OF WINNING any of the above prizes, all you have to do is solve the logo wordsearch. Listed here are 16 modern music artists who all use Toa equipment in the course of their work. Their names have all gone missing inside the Toa logo, and it's your job to find them again. Note that only the words IN CAPITALS are hidden within the puzzle. GABRIEL, for example, is concealed somewhere in one of the logo segments, but Peter is not.

When you've spotted all 16 names, circle them or highlight them in some way, fill in the entry form, and post this entire page to us (a photocopy will do, though one only per household please). CLOSING DATE for entries is second post on Wednesday, April 30, 1986. Employees of Toa Electronics, The Public Relations Company and Music Maker Publications and their relatives are ineligible for entry.

TOTO
Peter GABRIEL
Rick SPRINGFIELD
MISSING PERSONS
Roger NICHOLS
CHUCK WILD
MARILLION
CHAKA KHAN
Chuck LEAVELL
STEELY DAN
TWISTED SISTER
Stevie WONDER
THE BANGLES
Jeff POCARO
The BAND
Rolling STONES



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It's a standout performance instrument based on a new digital technology called Vector Synthesis. It's easy to program, it's made in America by Sequential, and it offers the full range of features and commitment to quality that is expected in a Prophet.

What is Vector Synthesis?

Briefly, complex sound waveforms are stored digitally (with a minimum of 128 waveforms—including white noise—always available). A sophisticated algorithm is employed to dynamically mix up to four of these stored waveforms together to create sounds. Both subtle, and powerful changes in timbre are easily accomplished —even during a live performance—using the joystick.

New waveforms can also be easily constructed and modified by the user via the joystick. These features are unique to the VS.

Made for Performance!

The Prophet VS offers more immediate control over changes in timbre than any synth ever designed. The ability to control and modulate stereo panning, voice oscillator mixing, and stereo chorusing in real-time, as well as instant access to 200 programs via ROM and RAM cartridges are just a few of the features making the Prophet VS a necessary instrument for performing artists. Additional features include a velocity and pressure sensitive 5-octave keyboard with programmable split, and the most versatile arpeggiator available to date—offering new options like polyphonic voicing, rests, and layering.

MIDI? The PROPHET VS MIDI implementation is matched only by the PROPHET 2000.

SEQUENTIAL

For further information on the PROPHET VS and other fine instruments from the SEQUENTIAL range, please send a £2 postal order made payable to SEQUENTIAL INC to: Sequential (Europe), PO Box 16, 3640 AA Mijdrecht, The Netherlands.

READY FOR LIFT-OFF

Are Sigue Sigue Sputnik a bunch of talentless poseurs cashing in on front-page controversy, or are they simply a group of well-meaning individuals giving the flagging horse of rock 'n' roll some of the impetus it so badly needs? Interview *Tim Goodyer*

Now, more than ever, the nation's pop consciousness is littered with controversial, hyped-up acts whose only talent lies in grabbing headlines, dressing up and getting rich quick. Style is orders of magnitude more important than content, and record companies are as likely to sign an act on the basis of a photograph as they are on the evidence of a demo tape.

This would appear to leave the art of musicianship in something of a sorry state. Nowadays, you're almost at a disadvantage if you can actually play an instrument, write songs and sing them. Or so the mass media would have us believe, anyway.

The truth of the matter, though, is that while bands like Sigue Sigue Sputnik may openly seek scandal and denounce musicianship at every available opportunity, they *aren't* advocating the selling of image for image's sake.

Contrary to popular belief, the Sputniks *care* about the music they make, and not just because it's helping pay the bar tariffs. Their 'non-musician' stance is no different to that of any other artist who feels it's better to get thrown in the deep end and learn about music the hard way than it is to spend years studying for degrees.

Sigue Sigue's reputation still follows them around like a stray dog behind a food truck, though. In the week leading up to this reporter's meeting with the group, Your Soaraway Sun had been hassling them for juicy stories and juicier quotes, and in the middle of a series of gigs, singer Martin Degville was left nursing stitches after a bottle was slung in his direction by a 'fan'.

But gutter press and broken glass notwithstanding, here I am, sitting on the floor of a tiny Birmingham hotel bedroom with guitarist Neal X. Immediately, I find him articulate and eager to give his side of the story. He avoids disclosing the actual amount that EMI finally agreed to give the Sputniks, but the events leading up to the signing come quickly to the tape recorder.

'We've been together for four years now. First we spent a lot of time living together, planning and learning each other's personalities.

'We'd been together for three years, walking around telling everybody about the band before they'd had a chance to hear us. Unlike Frankie, we actually had an album's worth of material, but we didn't approach anyone. We just talked about ourselves and made sure other people were doing the same. Then the record companies started phoning us up saying: "can we meet you, can we hear something?". And we said "no, no, when we're ready for you". They sent their scouts down to see us live, and then the main A&R guys came down...

'When the time was right we arranged a meeting with every record company, didn't leave tapes with any of them, showed them the video and said: "nice meeting you, we'll think about it".

'In the meantime we got ourselves a very, very good lawyer and told him we wanted a great deal: as good as Spandau Ballet, as good as

Sade, as good as Duran, then twice that because it's 1985 now.

'Then the A&R men were ringing *him* up and asking how much we wanted. The head of A&R at EMI said it was the first time he'd nearly hit a lawyer. He was very upset, but they came up with the money. It's a substantial amount, but we need that to do what we want to do. I thing we're a good investment for EMI.'

So while thousands of bands slave for years and get nowhere, the Sputniks have taken Mrs T's message to heart and gone into business, sacrificing their art at the altar of economics. Not bad for a bunch of eighties punks. Whoops! Shouldn't have said that...

'I think punk rock killed itself because of its nihilistic attitude. We're saying there *is* a future and let's make sure we're all in the driving seat to enjoy it, instead of letting someone else get up there.'

Point taken. None of the Class of '76 had the nous to show record companies clips from their favourite films, cut together to produce a taste of the excitement they wanted to convey. In Sigue Sigue's case, the result was an unashamed collage of death and destruction. That and the video to the 'Love Missile F1-11' hit, not to mention the band's advocation of ultra-violence, has left the Sputniks wide open to allegation of inviting trouble.

Neal X is at pains to draw a simple, crucial distinction between what the band term 'designer violence' and the real thing.

'What we are actually encouraging is *fantasy* violence. I think it's great to be able to go to the cinema and watch a film like *Rocky 4* because it helps get it out of your system. It's a different thing: watching *Terminator* is great, watching someone being hurt in front of the stage is sickening.

'We're not looking to attract a violent crowd, we're looking for an audience that's there to be thrilled and excited. People seem to have taken us a bit literally and thought the term "ultra-violence" means bottling the person next to you, which isn't really what it's about. I haven't seen anybody throwing bottles at a cinema screen yet.

'Our gigs tend to lie somewhere between excitement and complete madness. It's like a house of cards that's trembling and may collapse at any moment. And sometimes we do cross over that line.

'Someone at the back of one of the gigs said they thought it was the most electrifying experience of their life, and that at any second 200 people at the front were going to jump up on stage and trash the place.'

Take a band enthralled by today's hi-tech videos and films, and you take a group of musicians with a passionate interest in tomorrow's music technology, too. All Sigue Sigue's recorded drums and sequences are the work of a Linn

9000, linked to state-of-the-art synth modules like the Yamaha TX816 and Roland MKS80 Super Jupiter.

'The equipment's great', Neal enthuses. 'Rather than have to run through 41 takes for Tony (James) to get it right, you just plug the machine in.

'Every group uses drum machines these days, even the ones that deny it: they probably just trigger a LinnDrum from a kit because it sounds better. The machines don't argue. You tell the Linn to play eights and it doesn't turn round and say: "I'm playing fours in this!". It saves you a fortune in studio time.

'Our record isn't perfect, though. It does have mistakes, but I think that helps. What does it matter if you've got a few bum notes in there? That's rock 'n' roll!

'I suppose the quote about us that's been most twisted is: "who cares about the music?". It's not that the music isn't important, but we're about more than just music, we're about atmosphere.

'When we came to recording, we set out to reproduce the feeling we'd captured in the early demos we'd done. We want to sound like going to the cinema and watching one of those glamorous trash violence movies like *Rocky 4* or *Rambo*. It's a series of fast images cut together—all very bright. At first we thought we could do it ourselves but there was something missing until Giorgio Moroder stepped in. He took all the pressure off us and it came together really quickly.'

Moroder, undisputed king of synth disco since Donna Summer's 'I Feel Love' made it big in 1977, took a shine to Sigue Sigue's early demos. So much so, in fact, that he broke his own rule of non-involvement in 12-inch re-hashes to mix 'Love Missile' in three days.

In sharp contrast to those technology-dependent recording sessions, the Sputniks' attitude towards live performance is simply that it should be, well, live.

Neal X's guitar histrionics are accompanied by the drumming skills of Simmons twins Ray Mayhew and Chris Kavanagh; Tony James' 'space' guitar; vocalist Degville and guest sound manipulator Yana. Not a click-track in sight, let alone a sequencer or drum machine.

'Apart from anything else, it's aesthetically better to play the instruments live', says Neal. 'I don't like seeing groups that use backing tapes, it takes away a lot of the excitement. And some nights we might want to slow a song down or speed it up a bit, so *everyone* has to be playing.'

The rhythms are all straight from the pads of two Simmons SDS7s, the sequences from the strings of James' Roland GR707 guitar synth. Yana takes care of the Roland Space Echo that's responsible for the more consequential vocal treatments, and a Portastudio for sound effects and excerpts from various movies.

'The idea is that, when you see us live, your mind will relate to the films you heard the sounds in, and it'll conjure up a visual image of those films.'

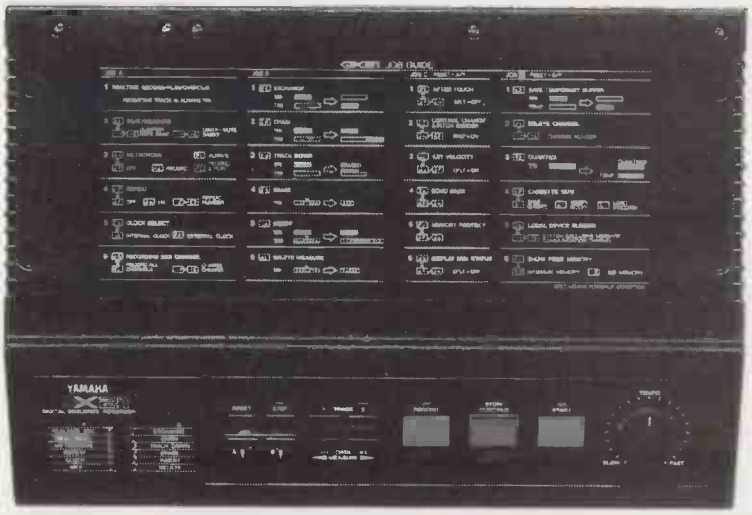
With one singles success already under their belts, but a scandalous reputation that shows no sign of loosening its grip, Sigue Sigue Sputnik are treading a thin line between delight and disaster. If the violent element of their audience continues to pursue them there's a danger the appreciative section will stay away. And if that 'anti-music' image gets too much coverage, their credibility will sink faster than the sales of pork luncheon meat in Golders Green.

But if the Sputniks can get their message across before the situation degenerates, then maybe Neal X has the best assessment of what the future will offer:

'Most groups have a couple of good ideas and they do OK, maybe even getting a hit single with those ideas. But I think we're creative enough to keep coming up with good ideas, over and over again.'

What was it John Lennon said? "Maybe six months, maybe a year even..!" ■

Yamaha QX21 MIDI Sequencer



The budget end of the hi-tech musical instrument market is becoming more and more competitive as the weeks go by, and it must be giving the marketing people a headache or two. Tough decisions have to be made as to which facilities can be left out, and which must be included at all costs. However, with their latest sequencer Yamaha have taken the unusual step of not leaving anything out at all. Not as far as I can see, anyway.

Truth to tell, the new QX21 is really just the QX7 (reviewed in E&MM April '85) with a few small alterations. The only appreciable differences are a slight change to the 21's MIDI data filtering facilities, the inclusion of a 'free memory' display (on a scale of 0-99) and the addition of a channel delete facility. The latter is a definite improvement, and it's tempting to wonder why the QX7 wasn't the QX21 in the first place, if you see what I mean.

Price alone suggests the QX21 is aimed fair and square at Casio's SZ1 sequencer (reviewed in E&MM September '85). On the facilities front it compares very favourably with the Casio, allowing more flexible editing and having more than double the memory (approximately 6000 notes with velocity, 8100 notes without). Although the 21 is organised as a two-track sequencer, you can in fact record on all 16 MIDI channels (though you're limited to 16 notes per track, so you can't do endless overdubbing), whereas the SZ1 limits you to a maximum of four different MIDI channels, even with bouncing down.

Recording on the QX21 (which can be in real or step time – polyphonic in both cases) is always on track 1. You then transfer your recorded data to track 2, record again on track 1, and overdub the new recording onto track 2 – effectively building up more than two tracks. With the QX7, however, you couldn't isolate different parts once you'd overdubbed; this is where the 21's channel deletion is valuable, as it allows you to erase parts associated with a particular MIDI channel. Thus if you feel that a particular part is too busy within the overall texture of a piece, you can erase it without having to erase everything else as well. However, it's a pity that Yamaha haven't taken this channel isolation principle further; a channel solo facility and some channel-specific editing would have enhanced the sequencer's usefulness a fair bit.

What else is of note? Well, the temporary storage buffer is useful for, among other things, being able to retrieve a track after a disastrous attempt at quantisation. Recording, playback and editing can begin from any bar, which is handy. And editing facilities include inserting and deleting individual bars, chaining track 1 data onto the end of track 2, and inserting track 1 data anywhere into track 2. The QX21 is measure-based, with bar-lengths ranging from 1/4 to 16/4 or 1/8 to 16/8.

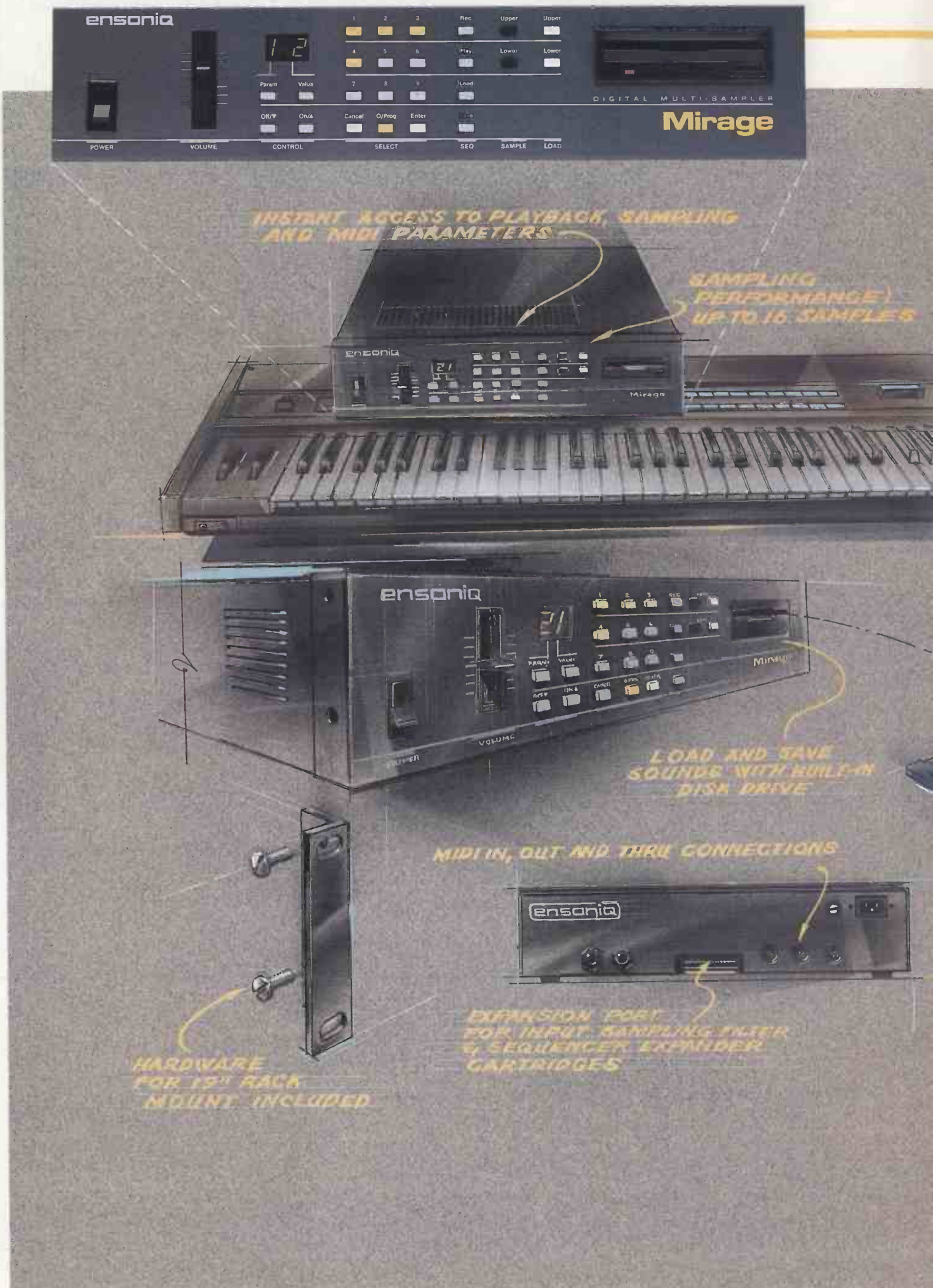
Interfacing is strictly MIDI-only, with MIDI In, Out and Thru all resident on the back panel. It's still a pity the MIDI Thru can't be switched to a MIDI Out, though: one MIDI Out simply isn't enough for more demanding applications, though Yamaha would no doubt be pleased if you bought their YMC10 MIDI Thru box.

Sequence data can be stored to tape, but like its predecessor, the QX21 can also transmit and receive sequence data via MIDI System Exclusive coding. This has the advantage of being much quicker than simply playing the data over MIDI, but don't imagine that you can transfer data to just any old sequencer – life just isn't that straightforward. What you can do is transfer data between QX21 and QX7, which I suppose might come in handy for some people.

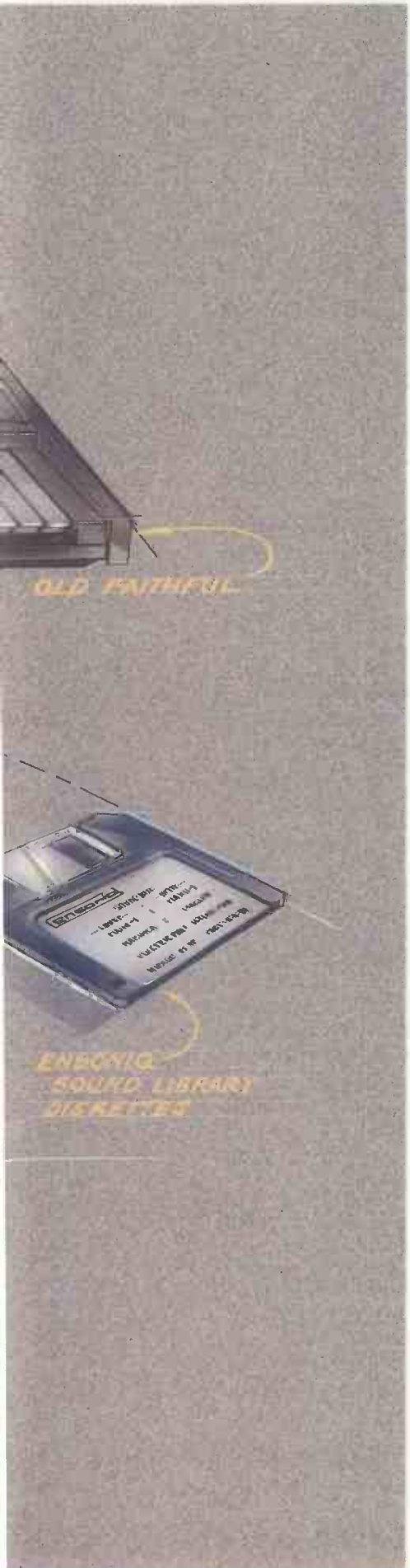
It's clear that the QX21 isn't a cut-down version of the QX7. In fact, it adds one or two useful features to the original machine. The QX21 is in many ways more flexible than the Casio with which it competes – and has more than double the note storage capacity. Maybe it's not quite as straightforward to use as the SZ1, but if you're after a dedicated sequencer, the QX21 has some useful features, and at its 'new' price, represents something of a bargain. ■ *Simon Trask*

Price *RRP £259 including VAT*
More from *Yamaha-Kemble, Mount Avenue, Bletchley, Milton Keynes, Bucks MK1 1JE. ☎ (0908) 71771*

The Mirage Multi-Sampler



. . . Put it on top of Old Faithful



Synthesis plus digital sampling- the best sounding way to complete your MIDI setup

If you own Old Faithful, or any other MIDI synth, you've got a good sounding, versatile and responsive instrument. So what could be better? Connect a Mirage Multi-Sampler to your MIDI system and see.

Synth voices come alive with character and individuality when doubled with real sampled sounds. Just make one simple MIDI connection and the Mirage Multi-Sampler responds with startling expression to your keyboard's pitch bend, modulation, velocity and pressure sensitivity-even breath control.

The Mirage Multi-Sampler has all the performance and sampling features of the Mirage Digital Sampling Keyboard-without the keyboard. It's a complete eight-voice instrument with a musical range of 5 octaves. There's even an on-board sequencer with overdub and disk storage ability. All this for about the price of a day in the studio[1].

If you want to create your own sounds, the Mirage lets you sample from virtually any source. But whether you're into sampling or not, Ensoniq has an ever-expanding Sound Library of diskettes with the most true-to-life sounds ever heard from an electronic instrument.

For live performance, recording, composing or creating your own sounds, top off your system with the Mirage Multi-Sampler. And breathe some new life into Old Faithful while you're at it. See your authorized Ensoniq dealer today for a complete demonstration.

ENSONIQ Corp, 263 Great Valley Parkway, Malvern, PA 19355
Canada: 6969 Trans Canada Hwy., Suite 123, St. Laurent, Que. H4T 1V8
ENSONIQ Europe, 65 Ave de Stalingrad, 1000 Brussels

1. The Mirage Multi-Sampler retails for $1395.00 . . . complete.

ensoniq®

I·N B·R·I·E·F

360 Systems MIDI Bass

Every so often, someone comes up with a musical instrument that breaks new ground. It needn't be a radical departure in technological terms, but as often as not, it's the implementation of some original ideas on themes already widely developed.

The 360 Systems MIDI Bass is one such instrument.

There's nothing new about sampling, and by the same token, MIDI is a vital aspect of many current electronic instruments. Yet the MIDI Bass takes both these established areas and, with a wonderful leap of imagination, combines them to create a unique machine.

Bass sounds are a fundamental part of almost every genre of music, yet they make fewer demands on the modern technology involved in reproducing them – low frequencies are the easiest and least expensive to sample successfully.

Further cost-cutting comes courtesy of MIDI, which makes a built-in keyboard unnecessary. Pitch can be provided by any other MIDI keyboard, or indeed a MIDI guitar or bass. Velocity information provided through MIDI can then contribute greatly to the instrument's expressiveness, without the increase in price a velocity-sensitive keyboard normally entails. The MIDI Bass can respond to pitchbend and mod wheels, too.

The machine's bass samples are supplied on chips similar to those used for drum voice-swapping by Linn and Sequential. Such chips can be quickly changed to provide a library of bass sounds suitable for many different types of music, and each one stores up to four different sounds, depending on the version you buy.

To say that the MIDI Bass is user-friendly is under-statement bordering on stupidity. Simply plug the MIDI Out of your keyboard/guitar/drum machine to the 360's MIDI In, select a sound from 1 to 4, and away you go. Real bass sounds at your fingertips.

But the friendliness doesn't stop there. For instance, 360 Systems have made MIDI channel selection a usable feature for novices by putting a dedicated selector on the MIDI Bass' front panel.

Most of the MIDI Bass sounds fall naturally over the bottom two to three octaves of a five-octave MIDI keyboard, but in case this proves to be awkward, it's possible to set upper and lower limits which govern the range the MIDI Bass will respond to, simply by playing top and bottom notes whilst holding down the Set button.

And as MIDI Bass is monophonic (like most styles of bass playing), the ability to set which priority you want is extremely useful. After all, in some situations it's convenient to have the highest or lowest note depressed as the one that's sounding.

The sounds supplied with the machine are instantly playable in whichever style you see fit, and it's for its universality that a Fender Jazz Bass sample is Sound No 1. It's too conventional to raise eyebrows, but it is good and clear. Slapped Bass does more to draw attention to itself – great for funk, jazz-rock or any music which requires a flamboyant bassline.

'Standup-Pizz' is a finger-plucked double bass that's simply splendid for trio-type jazz and other acoustic music. 'Mini-SEM', on the other hand, uses a Minimoog combined with an old Oberheim module to create a classic synth sound; and thanks to the MIDI Bass, it's velocity-sensitive, too.

Alternative bass guitar samples include a whole bunch of Fender Precision sounds (with or without plectrum, round- or flat-wound strings and so on), classic Rickenbacker and contemporary Steinberger samples, and some esoterica like a Gibson Ripper and an eight-string sample – though there's no Wal yet.

Keyboard sounds include several DX7 patches (including one that's described as 'a truly distressing abuse of FM synthesis') and a Fender Rhodes sample. There's even a timpani chip, which ventures outside the original brief of the MIDI Bass, but works a treat with pitchbend.

Alternative chips cost £35 each, and are changed simply by opening up the box and swapping with the chip already in place. You have to take care not to damage chip legs (ZIF sockets are recommended if you envisage constant sound-changing) and to put the chips in the right way round. A chip inserted the wrong way gets zapped within 10 seconds of the power being turned on, so if you aren't careful, an extremely cheap instrument could get very expensive, very quickly.

I still like the MIDI Bass, though. In fact, I like it so much I don't plan to return the review model. And if that means I have to start reaching for my wallet, then so be it. ■ *Brian Devereux*

Price *Two-sound version £299; four-sound version £360.*
More from *Rod Argent's Keyboards, 20 Denmark Street, London WC2. ☎ 01-379 6690*

Sample an LA sound in Deptford and play it at Dingwalls.

Sampling is a process that allows you to store and memorise a wide range of sounds from musical instruments to a variety of natural sounds. You can then play them musically via any MIDI synthesiser.

And AKAI's S612 is a first – leading the way in MIDI digital sampling.

It's a tremendous step for musicians, producing a high quality clear sound that is perfect in the studio or on the stage.

At under £800 (far less than any available alternative) it's an effective way of getting into sampling. By connecting it to your MIDI keyboard, sampled sounds can be produced with six-voice capability over a five octave range.

The smart, sleek two unit high, 19-inch rack mounted S612 is extremely easy to use. To capture a sound you simply press the 'NEW' button!

And you can sample, overdub, loop, select MIDI channel and load and save sounds onto the quick loading memory disc drive.

With AKAI's library of sound combined with your own sampling, your synthesiser will be able to produce up-to-the-minute sounds.

It's far cheaper than flying to L.A.

Now with audio trigger option

The S612 sampler

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Roland

NEW! ALPHA JUNO 1! 6 VOICE POLYSYNTH

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All new cosmetics terrific sounds! Fantastic value! Look at these features: 49 notes, 63 memories, 16 character LCD display
New LSI chip gives complex waveforms! New Dial System! Limited supplies in stock. Call for demo.

NEW! ROLAND MC500 MICRO COMPOSER

Micro composer with built-in 3.5" disc drive. Holds 100,000 notes per disc. Internal memory capacity 40,000 notes. Alpha Dial. LCD display. MIDI

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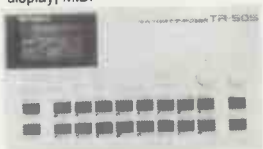
NEW TR505 – £225!

16 PCM voices, 48 preset, 48 program memories, 6 tracks, LCD display, MIDI



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OD-2 – Turbo-overdrive
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DIM-C – £99
OD-2 – £47
HF-2 – £69

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Super JX10, the ultimate analogue polysynth! 76 keys! 12 voice! weighted keys! built in sequencer! dual and split! 50 presets! 50 memories! MIDI! Alpha dial! Call for availability

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The most realistic and economical digital piano yet! Sounds incredible! 16 voices! 88 note keyboard! MIDI! **Call for further details**

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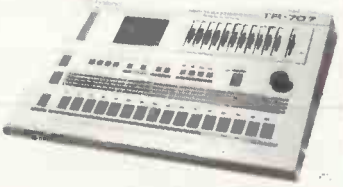
A ROLAND FIRST! TRIGGERS ANY MIDI DRUM MACHINE, SYNTH OR SEQUENCER
Eight touch sensitive pads, each independently assigned to midi note number, can control midi drum machines or synths. Four pad presets in memory plus curve, velocity and gate controls! Six external pads or triggers can also be used.



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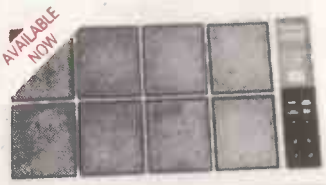

DIGITAL DRUM MACHINE

*TR727 DIGITAL PERCUSSION MACHINE

The TR727 is identical to the TR707 except that it has 15 digital recorded latin sounds. 64 rhythm patterns – midi in LCD display. Fantastic with PAD-8! Bongos, Congas, timbale etc.

*In stock at all branches

£450

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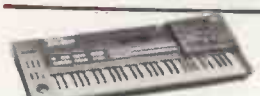
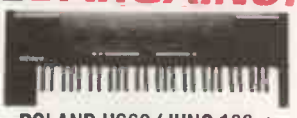


JX8P £899



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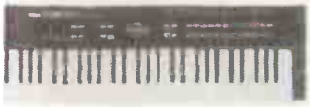
DX27 £499



…gular key version of the DX100. Its features and …cs are nearly identical to the DX100 so you can …it as a MIDI on line controller keyboard.

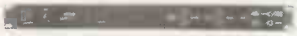
QX21 DIGITAL SEQUENCE RECORDER £259

…high-performance 2-track digital sequencer is …able of recording anything you play on a Yamaha …synthesizer or other MIDI keyboard, complete with …ch response (velocity), pitch bend, modulation, and …r function parameters, 6000 to 8100 note …nory, 7 character LED display, MIDI.

MCS2 MIDI CONTROL STATION £POA

MIDI magic! There is so much to tell you about this product we simply don't have the space. A million new ways to use MIDI. Call us and we'll explain.

SPX90 DIGITAL MULTI EFFECTS PROCESSOR £599!



One of the most exciting new products to appear for years! Features include reverb, early reflection, delay, echo, modulation control, autopan, vibrato, reverb & gate, pitch change, freeze, ADR gate, compression, parametric EQ, flange, phase, MIDI. RC7 Remote controller available soon!

MEP4 MIDI EVENT PROCESSOR £POA

The MEP4 has a myriad of uses in MIDI recording. In the studio it can do such things as removing unwanted controller information from a sequencer track, delaying MIDI clock messages, or assisting in MIDI mixdown. 60 program memory, 16 character LCD display.

NEW YAMAHA SDS PEDAL RANGE – Superb Quality, Super Low Price!

Compressor	£39
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Graphic EQ	£59

YAMAHA

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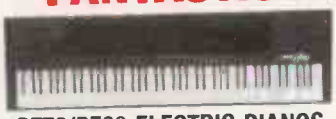

PF70/PF80 ELECTRIC PIANOS

80 Note, 10 voices, LCD display, weighted action, programme editing, MIDI, tremelo chorus, 3 band eq, 16 prommable functions

PF70 £899 – PF80 £999

WXY10/5 WIRELESS DIVERSITY SYSTEMS £599/£799

Freedom at last! Yes we've waited a long time for these fantastic new products from Yamaha. Now you can have completely free guitars, keyboards or mics with no loss of quality whatsoever. Well worth waiting for, two versions available, single or multiple, call for further details.

SUPERB NEW SE GUITAR SERIES

This amazing new series includes SE350, SE250, SE350H, SE150! They must be seen to be believed!

CALL IN FOR DEMO!

MT1X MULTITRACK RECORDER/MIXER £449

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RX21L as RX21 but with 16 PCM percussion voices, 50 programmable songs, cassette storage, MIDI, congas, tambourine, bongos, timbale, conga, cowbell, whistle, clavers

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SFG05 TONE MODULE CARTRIDGE £99

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*DC = Disc compatible

NEW! SFG05 RX21 Tone Module Cartridge £99!!

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HI-TECH EXCELLENCE!!!

DX21 £649

128 Pre-programmed voices, 32 performance memories, MIDI, 8 note polyphonic

QX1 MEGA SEQUENCER SUPER PRICE

Incredibly sophisticated state of the art data storage, the most powerful yet! 8 Polyphonic channels, built in disc drive with one megabyte storage (80,000 notes!) Extremely sophisticated editing. Best Yet!

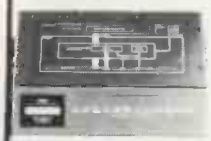
DX100 £349

DX100 battery operated FM Synth mini keys 129 voice ROM, 8 note polyphonic, 49 notes, ideal MIDI control synth.

KX88 MOTHER KEYBOARD

Yamaha invent the ultimate in MIDI remote keyboards! Light and portable yet full of features! 88 notes wood keys, beautiful feel! 19 different control effects, 192 parameter change possibilities. THE ULTIMATE.

RX21 DRUM MACHINE £249



TX7 FM TONE GENERATOR £499

REV 7 £899

Yamaha break the price performance barrier with the brand new REV-7! 19" rack mount unit with remote, simulates any reverb characteristics! New LSI chips give up to 15 early reflections and 99.9 milliseconds of initial delay. Parametric EQ, MIDI, 30 x presets, stereo, 60 user memories!!!

QX7 DIGITAL SEQUENCE RECORDER £299

MT44D Multitrack Recording Systems PHONE

E.& O.E.

FUTURE MUSIC PRICE PLEDGE! – PHONE ANY BRANCH FOR DETAILS!

FUTURE MUSIC PRICE PLEDGE! – PHONE ANY BRANCH FOR DETAILS!

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FANTASTIC NEW PRODUCTS

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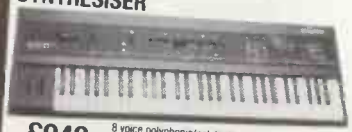
Use multi-sampled grand piano waveforms first instrument. 76 keys, touch sensitive, MIDI, 12 other sounds include electric piano, honky tonk piano. Call in for demo.

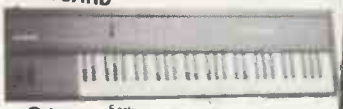
£949

ESQ1 DIGITAL SEQUENCER SYNTHESISER



£949 8 voice polyphonic/polytimbral, 3 oscillators, per voice 80 character display, 40 programs, 8 track, 2400 notes, up to 10,000 with cart, MIDI sequencer.

MIRAGE DIGITAL SAMPLING KEYBOARD



£1295 5 octave velocity sensitive keyboard, 8 voice polyphonic, 16 different samples, up to 8 seconds, 3.3" disk drive, on board sequencer, MIDI

MIRAGE DIGITAL MULTI-SAMPLER (RACK MOUNT)

£995 Rack mount version of Mirage keyboard, MIDI. See above for spec.

NEW ALESIS

THE FANTASTIC NEW

MIDIVERB – £399!!

Completely digital, the Midiverb offers a powerful range of 63 room programs in full stereo. Everything from small rooms to full halls. Decay times from 0.2 to 20 seconds as well as gated and reversed programs for special effects, plus MIDI.

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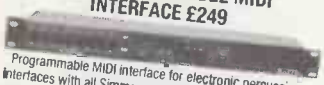
SDS1000 5 PIECE KIT £649 excluding stands

5 user & 5 factory memory patches – footswitch memory patch changing – 4 digitally sampled snare drums – headphone jack for silent practice

TMI PROGRAMMABLE MIDI INTERFACE £249



Programmable MIDI interface for electronic percussion – interfaces with all Simmons electronic drums – 50 memory patches – programmable MIDI note, channel and program data.

SDE MIDI PERCUSSION EXPANDER £499

Generates a range of percussion sounds from tuned percussion to bells & gongs – 20 factory sounds, 20 user programmable sounds & 20 sounds loadable from a range of cartridges – easily accessible programming format – volume, pitch, MIDI and operating data all storable.

SDS 9

SDS9 £1199

More than a match for the acoustic kit because it is designed to give you everything the acoustic has to offer – and much more besides – 20 user programmable kits, new pads, 3 snare sounds, rimshot, all digital sounds, MIDI.

MTM MIDI INTERFACE £595

Translates audio signals into MIDI and MIDI code into triggers – programmable input – trigger processing – accepts drum pads, mic'd acoustic drum and drums off tape – programmable dynamics, MIDI data and effects – 100 memory patches with sequential program switching.

SDC200 AMPLIFIER £550

200 watt amplifier for electronic percussion – custom designed speaker unit – input channels & equalisation for kick, snare, toms, hi-hat & cymbals – effects send or each channel – rugged, powerful, yet highly portable system

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Sampling can be performed either using an external microphone or LINE IN connection. 0.8 second sampling period for a single sample or divide among maximum of 4 different samples. 12 built-in sounds are produced by a PCM sound generator. Total of 10 output terminals are equipped for individual sound control.

SK-1 DIGITAL SAMPLING KEYBOARD ▶

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8-bit PCM ● Sampling rate: 9.3 KHz (max.) ● Sampling period: 1.4 sec. ● One-key play ● 4-note polyphonic ● Toy Symphony preset as demonstration ● Vibrato and portamento effects ● 13 types of chords including CASIO CHORD ● Built-in speaker

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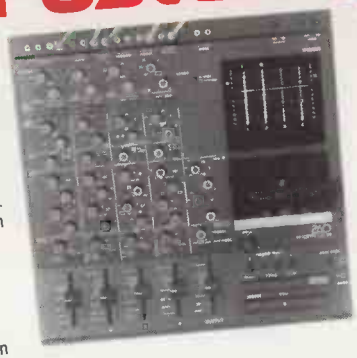
Accessit 'Exciter' now in stock plus complete range

Fostex

NEW

FOSTEX 260 MULTITRACKER only £699!!!

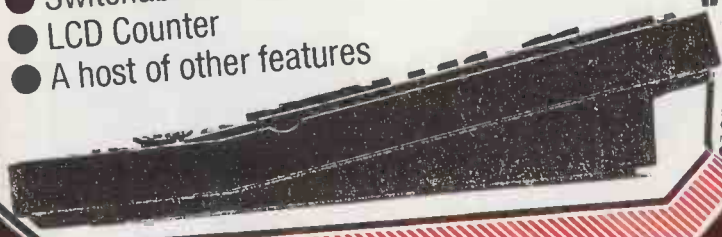


Production Four Track

More than any other format four track is used for producing music demos and programming. High speed cassette has taken over from open reel and for even greater convenience, recorder and mixer have been combined as a single unit.

The Fostex 260 caters for all the new techniques of the advanced four track user. More equalisation, more auxiliaries, and even more flexibility. Plus the clear, transparent sound that Fostex has become famous for.

- 2 Auto Locate Memories
- Dual Parametric Sweep Eq
- 2 Auxiliry inputs per channel plus 2 line inputs
- Switchable Dolby C Noise Reduction
- LCD Counter
- A host of other features



Fostex

MODEL 80 MULTITRACK RECORDER

Fostex pioneered eight tracks on quarter inch. This unique format offers convenience and economy of operation with audio mastering quality. This unique fourth generation Personal Multitrack recorder and uses microprocessor control technology to achieve smoother, faster working. Connections are provided for both the remote and synchroniser accessories.

Model 80 audio quality is tight and clear, the result of no frills electronic circuit design and the incorporation of the latest Dolby 'C' noise reduction. Every feature is included to make the process of recording and overdubbing, faster and even more manageable for working musicians.

- Redesigned cosmetics with bargraph meters
- SMPTE timecode track ● Dolby C
- Improved signal to noise ratio + 20DB
- Record on all 8 tracks live
- MIDI interface for controlling synths

450 MULTITRACK RECORDING MIXER

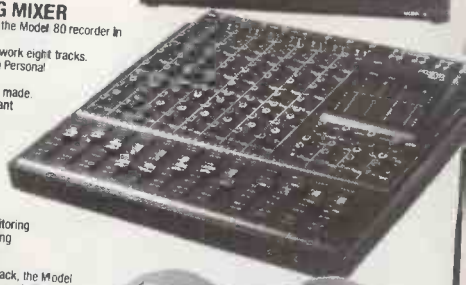
The Fostex 450 mixer is designed to complement the Model 80 recorder in versatility, quality and speed of operation.

It has a total of seven busses, but it's designed to work eight tracks. Efficiently and economically. The state of the art in Personal Multitrack.

Like all Fostex products it's carefully designed and made. Sensible colour coding and light weight are important physical features. Electronically and operationally there's innovation throughout.

Every feature for mixing and monitoring has been included to provide a fast console for music or production applications.

- Completely redesigned cosmetics and routing system
- Bar graph integral meters
- Pre and post 3 band parametric eq ● In line monitoring
- Input solo ● 2 aux sends ● Phantom powering



MODEL 20 MASTER RECORDER

Based on the same transport as the Model 80 Multitrack, the Model 20 Master recorder offers unique facilities to anyone mastering for production.

The standard mastering two track, two channel format is supplemented by a third, cue channel, located in the centre of the tape, intended for recording and playback of SMPTE time code. This feature, coupled with full synchroniser compatability, puts all of the potential of advanced production techniques into the hands of the user.

The proven cost benefits of the compact Fostex transport, and the incorporation of up to date facilities opens up a new range of opportunities in multitrack.

Until now, synchronisation of SMPTE and MIDI, of music and video, was reserved for select, top of the market studio operations. Now Fostex puts this link to the future within reach of every working studio and musician.

- Matching cosmetics to model 80 & 450 ● Bargraph integral meters ● 15 & 7.5 ips speed ● Varispeed ● Easy editing
- Dolby C ● SMPTE

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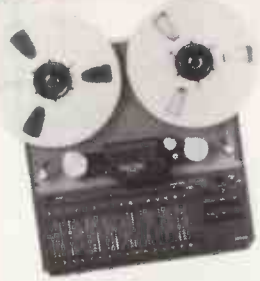
FUTURE

Fostex



FOSTEX B16

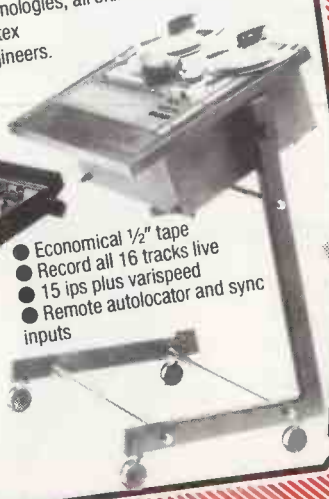
The Fostex B16 is the most compact sixteen track recorder ever made. Small enough to use in any application. Light enough for one man to carry. And affordable for a working musician to own and use.

It's development and the outstanding audio quality were made possible by advances in several basic component technologies, all skillfully employed by Fostex engineers.

SECK 1882 MIXER

The ideal B16 partner and now at a very attractive price

- 18 inputs, 8 out and stereo out
- Use as multitrack or live mixer
- 16 track monitoring
- Mid-range parametric
- Up to six auxiliaries
- Compact and highly portable yet superbly sophisticated
- Peak bar graph meters



- Economical ½" tape
- Record all 16 tracks live
- 15 ips plus varispeed
- Remote autolocator and sync inputs

Fostex

FOSTEX 4050 AUTOLOCATOR

For use with A80, A20 and B16 models!! Incredible features!!

- Autolocator has digital LED display and is totally programmable (minutes, seconds, bars, notes!!)

Tempo change in realtime

- SMPTE time code

4030/ 4035 SYNCHRONIZER CONTROLLER

- MIDI ● Computer interface

synchroniser will lock AVD10 to audio or audio to video! Optional 4035 controller!! All new and unbeatable value!

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New Korg EX800 £199 A
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S/H Roland SH2000 £149 C
S/H Arp Omni £Offers! C
S/H Korg Micro Preset £Offers! C
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S/H SH101 MGS1 £175 S
S/H Yamaha CS70M £499 S
S/H Roland Planet Mod £699 A
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S/H Korg Polysix £449 S
S/H Moog Rogue £99 S
S/H Moog Prodigy £99 S

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New Yamaha KX88 £999 A
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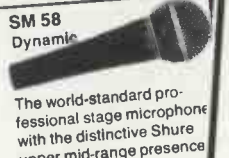

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Fostex A2
Fostex B16
Fostex X15
Fostex 250
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Dynamix 24/8/2
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Boss BX600
Boss BX800
Roland RM1200
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Yamaha 602
Ramsa
AHB CH24
AHB 1682
Fostex 450
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Canary 8/10
Canary 16/8
Promark 10/8/2
Fostex 350
Aces 10/8/2
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Shure Protoluge 12
Shure Prologue 14
Nueman U87
Nueman U47
Nueman U69
AKG 231
AKG D80
Shure SM58
Shure PE66
Audio Technica Pro 1
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Roland SEQ331 31 band
Roland SEQ315 2×15 band
Yamaha Q2031 2×31 band
Yamaha CO1031 31 band
Boss Micro Rack Graphic Eq

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Roland R100
Accessit Stereo Rev
Fostex 3180
Roland SRE555
Roland RE701
Roland RE201
Roland RE301
Great British Spring

COMPRESSOR/LIMITER
Drawmer Compressor Limiter
Fostex 3070 Comp/WM
Yamaha CQ2020
Accessit Compressor
Boss Micro Rack Comp/Lim/Exp/Gate

DIGITAL DELAY
Roland SDE2500 MIDI
Roland SDE1000
Roland SDE2000
Roland SDE3000
Boss DE200
Boss Micro Delay
Boss DD2
Korg SDD2000

DIGITAL REVERB
Roland SRV2000
Yamaha Rev 7
Yamaha Rev 1
Yamaha R1000
Alesis
MXR
Lexicon PCM 60/100

MONITORS
Casio AS-10
Tannoy Stratfords
Tannoy Oxfords
Yamaha NS10
Yamaha S10X
Yamaha S20X
Ramsa WS-A10
Ramsa WS-A70
Ramsa WS-A200
Boss MN15
Boss MS100
Fostex SP11
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TAPE SYNC
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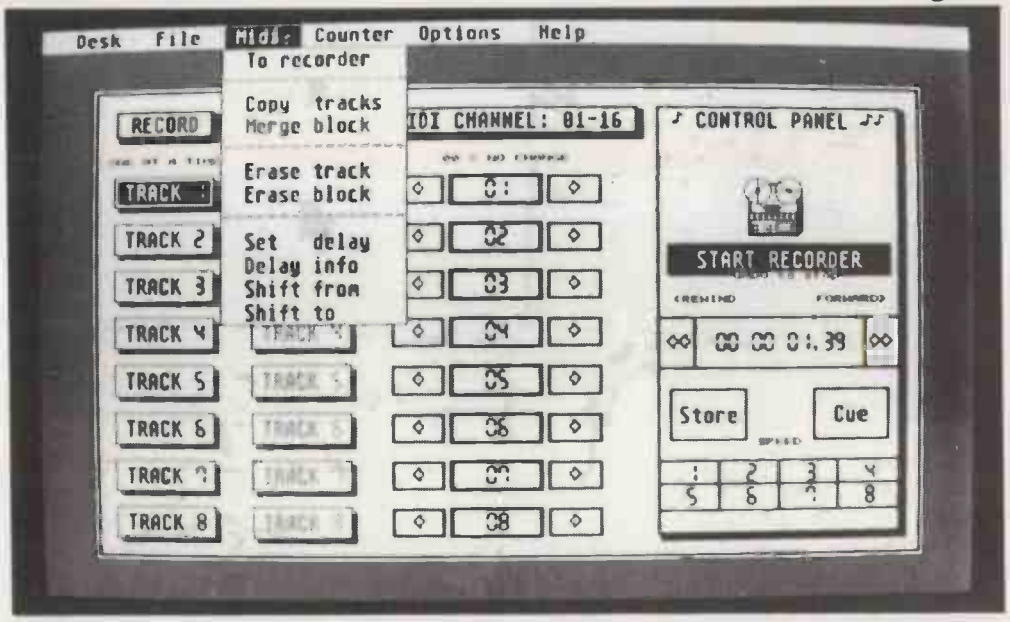
MoPro Atari 520ST MIDI Software



As many of you will already know, the Atari 520ST is the first home computer with a built-in MIDI interface (save Yamaha's custom-designed CX5), and as such, signifies the coming of age for what was always meant to be a computer communications system, as well as a means of connecting instrument to instrument. So far, though, there's been an odd lack of MIDI software for the ST, which already boasts plenty of specially written packages in fields such as wordprocessing, databases and graphics.

This is a shame, because the Atari uses the fast, modern 68000 16-bit processor, operates under a fancy windows/icons/mouse graphics environment called GEM, and includes a built-in 3.5-inch disk drive, plus a massive memory. All this makes it better specified than many more expensive dedicated music sequencers, *if* the software is right.

The first contender for the ST MIDI market is a package called MIDI Recorder from MoPro (Modern Products) of Holland. The version I saw was very much pre-production, full of windows popping up to say THIS IS A DEMO whenever I tried to do something useful. As it stands, the MIDI Recorder does enough to demonstrate the Atari's suitability for musical applications, without achieving very much in software terms. For unlike most sequencers (both dedicated and micro-based), this one just records data and plays it back – it doesn't allow the rearrangement of patterns to form songs, or indeed anything resembling a useful compositional feature. All you can do is record some music, overdub some more onto it, and replay the results.

The software's opening screen menu allows you to choose from Desk, File, MIDI, Counter, Options and Help. Selecting MIDI takes you into the Record menu, which allows you to select any tracks or blocks to be erased or merged, and to set the delay time before recording starts. Having made your selection, you move to the main display.

To the left of this are the windows for the eight tracks available, which can only be recorded one at a time. Next to these are the Play tracks, of which any can be selected and be given any MIDI channel number between 1 and 16.

It *appears* that there are only eight speeds at which you can replay your sequences. Default speed is 4, so if you record at 4 and play back at 8, your tracks play faster. The finished version will no doubt have a user-defined tempo in beats per minute, but there's no sign of this yet. Also conspicuous by its absence is a page for setting up drum-machine synchronisation, though again, this will surely be included on the finished package.

Having recorded your eight tracks, you can change the MIDI channels selected at any time for playback. It's also possible to copy tracks: select at least one track under the Play header and an empty track under Record, and the tracks automatically copy across, leaving the originals still available. Should you wish, you can then select Erase to clear the tracks.

The File section allows you to name your compositions, note which instruments were used and so on, and then store all this information on disk.

Overall, although it uses the GEM operating environment to good effect, the MoPro MIDI Recorder falls down through being insufficiently ambitious. There's no step-time option, no music editing, and no facility for chaining patterns to form songs. Why this should be, on a micro as powerful as the 520ST, I have no idea.

It would be nice to think that the MoPro package will be significantly improved in its release version, but I still await the MIDI software which will do the 520ST justice. Steinberg Research in Germany and Soundwave in Canada are busily working on Atari programs, while MoPro's future plans include a 'proper' sequencer package, so perhaps those are the ones to look out for.

■ *Chris Jenkins*

More from *Ruud Pernot, MoPro, Wittevrouwensingel 93, 3514 AL Utrecht, Holland ☎ 030-714897.*

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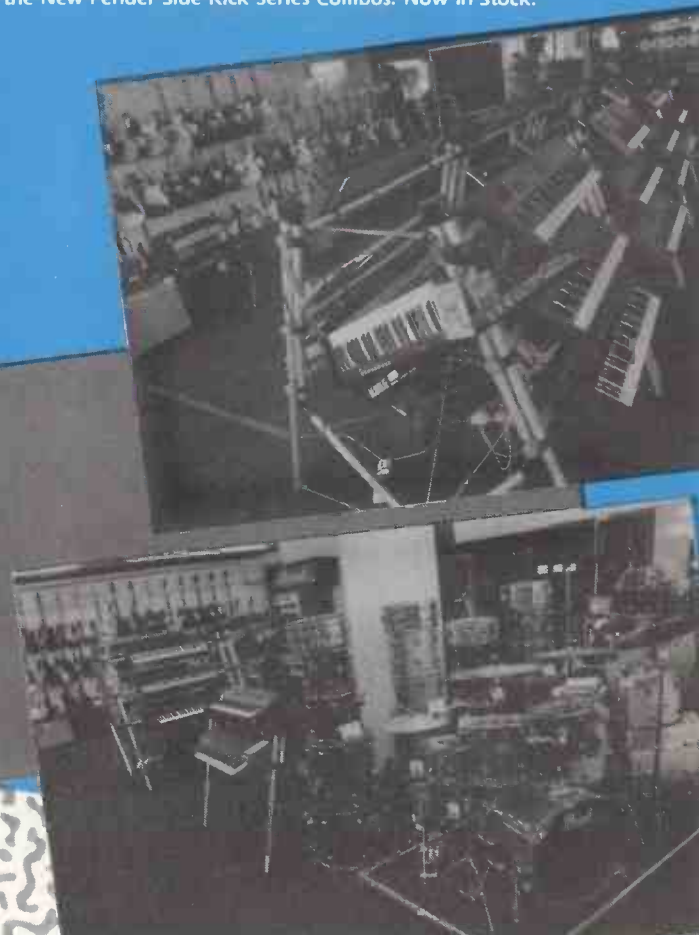

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Sycologic M16

Wandering around the new, refurbished Syco during a recent launch party, my eye was caught by an unassuming 2U-high rack unit, with a remote control featuring a keypad and one of those splendid new light-on-dark-blue liquid crystal displays.

Further investigation showed it to be a 16-by-16 programmable MIDI Matrix. It had myriad programming possibilities, and with its smart, ergonomically efficient styling, it certainly looked expensive.

Conceived by Ken McAlpine (an ex-E&MM staff man, no less) with hardware by Tim Orr and software by Richard Monkhouse, the Sycologic M16 is best viewed as a more elaborate variation on the theme written by the company's earlier MI4 unit, one of the first MIDI switching devices to come onto the UK market.

The first thing the M16 allows you to do is label all 16 of your MIDI sources (the controlling devices) and all 16 of your MIDI destinations (slave units). You don't have to keep remembering what's plugged where. Each time you call up a source or destination, it's clearly labelled. Of course, this doesn't stop you connecting things wrong, but you can refer to these names to help you plug in everything correctly.

Having named all the instruments connected to the M16, you can begin to create no fewer than 32 custom routings. When you've entered all the information for each patch, you simply Store it with a patch number. If you have two patches similar except for one crucial routing (say), you can call up one, make the required change, and then restore it as another patch.

But patches aren't restricted to storing routings. They can also remember MIDI program changes, and transmit them on a specific channel when the patch is selected.

When you've set up your 32 patches, you can access them in several ways. Type the number on the keypad or use Increment and Decrement buttons to call up the desired patch, and then hit Enter at the moment you want it. This is useful if you have to make a very fast change, and also prevents you from automatically calling up the wrong patch. Alternatively, you can set up the M16 to receive a MIDI program change from a master keyboard, effectively altering all routings and patch changes from one button press. You can even make the M16 look at one particular MIDI channel for this program change, or have it respond to all program changes no matter what the transmitted channel.

As if all this isn't enough, dedicated techno-buffs can use the M16 to analyse exactly what excuse for MIDI their keyboard or sequencer is sending out. By switching to MIDI Analyse mode, you can display the last 12 bytes of any MIDI data received by the Matrix.

You have to take a quick course in hexadecimal before you can even *begin* to interpret the displayed bytes, but no matter how you approach this facility, it does help you understand why your Yamaha synth is interpreting Roland aftertouch data as a series of program changes...

More useful for the average musician, though, is the fact that the M16 can be made to turn off any droning synth that data errors have left hanging on. The Matrix does this by sending an All Notes Off command. However, some synths don't understand this standard MIDI message, so it follows this by actually sending a Note Off command for every note. Clever stuff, undoubtedly.

Yet simply by using the M16, you're less likely to suffer from disobedient MIDI equipment in the first place. One of the reasons for synths droning on is that MIDI Note Offs get lost if you re-route whilst instruments are sounding. But the M16 features a built-in Switch Lock system, which prevents changes from taking place while data is arriving on any one of the 16 sources. It works by slotting changes in-between when no transmission is taking place, and that's a good thing.

As it happens, the M16 is a good thing generally. I already don't know how I managed with less than 16 Ins and Outs, even though many session players and studio owners will probably struggle on with the sockets given them by synth designers.

For composing, recording and (especially) performing work, Sycologic's M16 makes an awful lot of MIDI sense. ■ *Paul Wiffen*

Price *M16 basic unit £599 plus VAT; M16x expander £299 plus VAT*
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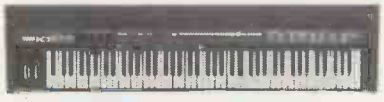

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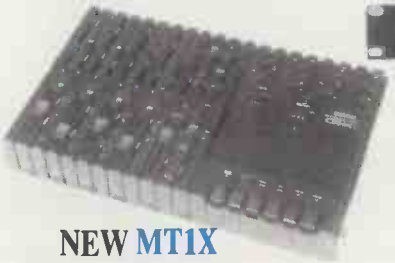

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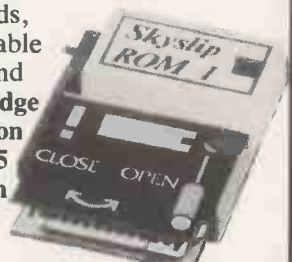

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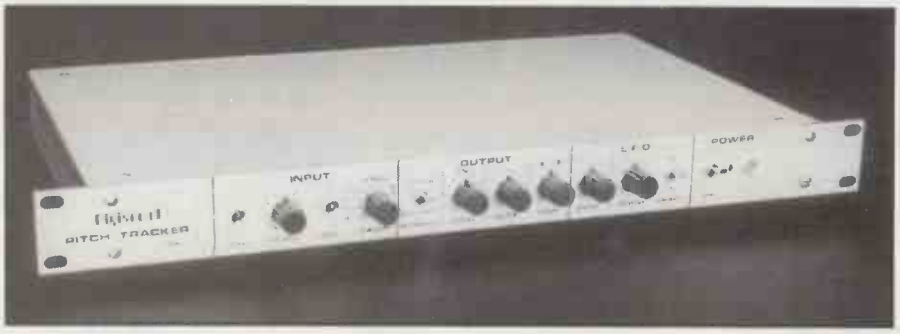
Digisound PK1 Pitch Tracker



For longer than I care to remember, musicians have dreamt of being able to control a synthesiser from an acoustic instrument (guitar, flute, trumpet, you name it), or from their own voice. So far, however, all attempts at giving musicians remote pitch-tracking facilities have been flawed and/or horribly expensive.

Digisound's new offering – the PK1 Pitch Tracker – is certainly down to earth, costing under £200. But not surprisingly, it lacks the sophistication of more expensive units and is strictly monophonic. Its circuitry, which employs digital conversion techniques, accepts signals over a five-octave range. This range can be extended up or down to track frequencies between 50Hz and 12.8kHz.

The PK1 makes no sound at all as it stands, so you need to connect its CV and gate outputs to an analogue monosynth before you can do anything musically useful. The gate is the standard positive-going type, but Digisound can supply other types (such as trigger) to order.

The next job is to put in a steady tone from some source, at which point you can adjust the Tune control so that the output pitch from your synth is the same as the input pitch. Alternatively, you can set the output to other octaves or intervals, but it pays to *begin* simply and then expand your horizons gradually.

That's the easy bit over. Now plug in your vocal/contact mic or electric guitar, and adjust the unit's Input Level and Input Range controls for optimum tracking. Finding the correct setting for the Range control can be a bit hit and miss, but the manual is helpful here, as it gives the frequency range of several potential input sources and lists their appropriate range settings.

A switch named Resolve activates a quantisation facility which organises the output into neat semitone steps; an Envelope Level control outputs a voltage proportional to the envelope of the incoming signal; while a Glide knob controls simple portamento. The two latter functions can be connected to external CV sockets on synths that have them, but the effects they produce can usually be accomplished at the synth end as well.

Finally, a welcome LFO modulation section offers adjustable Rate and Depth, with a choice of sine and triangle waveforms.

In use, the first thing that comes to light is that the Digisound system is *extremely* fussy about which waveforms it'll accept. It mistracks in spectacular fashion when fed with anything complex as it locks onto the harmonics.

Using a vocal input, 'ooh' sounds and whistling work fine, but ordinary speech results in another dose of sonic pyrotechnics – unpredictable, uncontrollable, and more at home on a *Star Wars* soundtrack than a serious music recording.

As for using a guitar, you'll need to set yours to its least trebly tone on the bass pickup before you'll get a tune out of it, and even then, you'll have to play one note at a time very evenly.

Judging by the way the PK1 tracked whistling, I'd guess that a recorder or flute should work fairly well. Yet even on the simplest of inputs, there was always some degree of mistracking. You can, however, minimise this by invoking the Resolve function, so that all the mistakes come out rounded-off to the nearest semitone.

The PK1 is *not* a machine for musicians who expect pitch-perfect results on every note – and if you think it's going to give you a foolproof guitar synth, forget it. It won't satisfy the latest generation of thoroughly MIDIfied synth players without a CV-to-MIDI interface, though Digisound are developing one of these as I write.

Meanwhile, experimenters will delight in the range of bizarre sounds that can be had simply by plugging the Pitch Tracker into a long-forgotten monosynth, and then crooning into the mic input. Some pervert has even suggested plugging his harmonica into it.

Getting the best out of the Digisound demands perseverence, imagination and the ability to live with a musical result that may not quite be the one you predicted. But it *is* great fun, a good deal cheaper than its competition, and very easy to switch off when you've had enough. ■ *Paul White*

Price *£199 plus VAT, mail order*
More from *Digisound, 14/16 Queen Street, Blackpool, Lancs FY1 1PQ. ☎ (0253) 28900*

FUTURE SHOCK

As technology gets cheaper and low-cost instruments start offering facilities that were once the preserve of expensive computer systems, we preview two new upmarket machines – the Series III Fairlight and PPG's Realizer – that ensure the big boys stay ahead of the pack.

'RELAX. Take a few deep breaths, think pleasant thoughts. It may take a little while to become expert with the CMI III, but it will be worth it. Now get the CMI III up and running... When you and the machine are both ready, there are a few explanatory notes about using the CMI, and a tutorial, designed to lead you through some basic routines... After that, you will be confident of success.'

That, ladies and gentlemen, is what you read when you get your Series III Fairlight home, extricate the manual from its packaging, and open it up on Page 1. To be fair, there's no other obvious way of introducing an instrument so sophisticated, it makes its predecessor look like an Alba valve radio.

Mind you, the Series II CMI was a hard act to follow. When it was unveiled seven years ago, it was musically, technologically and conceptually streets ahead of almost everything else – and it took everyone else a good while to catch up. But catch up they have, and the Series II is now being challenged on all sides by cheaper sampling keyboards and MIDI-linked computer/sampler/sequencer combinations.

But for the last three years, Fairlight's engineers have been aiming higher, and the result of their endeavours is the 16-voice Series III CMI. It's still a sampling-based instrument, but its *power* is orders of magnitude greater.

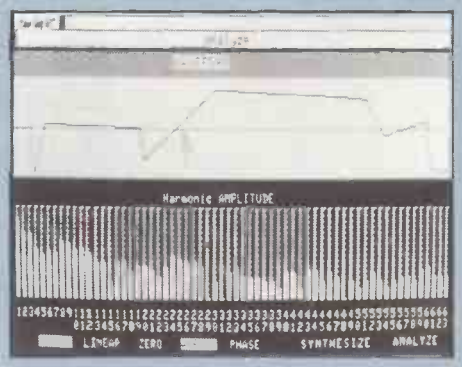
The machine is now starting to appear in small numbers in the UK, but if you fancy shelling out a cool £65,000, you might be in for a bit of a wait – there's a mile-long list of takers at Syco, Fairlight's British distributors. For Series II owners, the massive cost is alleviated by the fact that 'old' Fairlights can be traded in for new, after which they're whisked back to Australia; what happens to them after that is anybody's guess.

In appearance, the new Fairlight doesn't look greatly different from its predecessor. The most obvious changes are a new slimline alphanumeric keyboard with inbuilt graphics tablet (much more effective than the earlier lightpen) and a new monitor. The keyboard is unchanged, which means it's six octaves (F-to-F) long and has plastic keys, and is sensitive only to attack velocity. This compares unfavourably with the new Synclavier keyboard, which is weighted and includes polyphonic after-touch, but you could argue that with MIDI now forming such an integral part of the III's design concept, you could just as easily use a high-quality MIDI keyboard as controller.

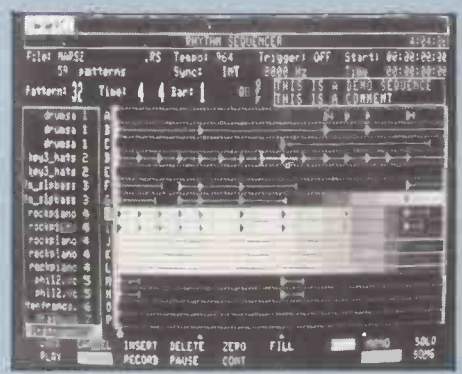
On the storage front, the new Fairlight has both a 2Mb eight-inch floppy disk drive and a 140Mb hard disk drive onboard, while a tape streamer for backing up the hard disk can be added via the SCSI interface (of which more later). Transfer of sample data between internal memory and hard disk uses Direct Memory Access, a procedure that allows memory-to-memory transfer without tying up the central processor. Samples can be loaded from hard disk while a sequence is playing, and loading is so fast that a sample can be loaded as it's being played.

The Series III is also a multi-tasking system, which means that unlike E&MM's Editor, it can do several things at once. Thus you could be running a sequence while working on or loading samples, or altering MIDI allocations. It's rumoured that you'll be able to run two monitors to take advantage of these capabilities – should be great for people with two heads.

BENEATH the surface, the CMI software is written on top of the 6809-based, Unix-like OS9 operating system, itself modified by Fairlight. It's possible to exit from the CMI software and indulge in such pastimes as word-processing, playing games, and rewriting the Fairlight software (well, maybe). Like its predecessor, the Series III is actually based on two 6809 processors; one of these runs the bulk of the system while the other concerns itself primarily with sequencing. There are also two 68000 processors, one dedicated to handling MIDI and SMPTE, the other acting as an all-purpose waveform processor complete with its own 512K of RAM. Each of the eight dual-channel audio output cards has its own 6809 processor and 64K of working memory. The modular hardware design



Fairlight page screens ***aren't drastically changed, but several pages have now been merged together in the interests of operational neatness; CAPS composer/arranger software is still under development, though***



New Series III Fairlight *looks little different from illustrious predecessor; inside, wholesale changes mean new system sounds better, records for longer, and costs nearly twice as much as Series II*

concept of the previous Fairlight has been retained, and here consists of 27 slot-in cards which handle, in addition to the above, such features as disk drive interfacing, video display and SCSI interfacing.

Impressive as these technical details are in themselves, it's the implications they have on the Series III's performance that will draw most attention. The main areas of improvement lie in sample quality, sample storage, voice organisation, MIDI and sequencing.

Let's start with sample quality. The old Fairlight's samples were eight-bit, of course, and the maximum sample rate was around 30K. The Series III allows you to sample in eight- or 16-bit modes, and in mono or stereo; all combinations can be mixed in performance. Default sample rate is the CD-standard 44.1kHz, but for stereo sampling this can be increased to 50kHz (actually 48kHz due to channel switching of the ADC, apparently), and for mono sampling a staggering 100kHz – though whether anyone actually needs to sample at 100kHz is debatable. The maximum playback rate is 200kHz, allowing samples recorded at maximum rate to be replayed at up to an octave higher than their original pitch. Series II Fairlight users will be extremely glad to know that their current sample libraries can be used on the III, courtesy of a conversion program; the same applies for Page R sequences.

SINCE the original appearance of the Fairlight, the cost of memory chips and peripheral storage media has fallen drastically. This has enabled the Australians to adopt a much more flexible internal architecture, so that whereas the Series II's samples are stored in a modest 16K of waveform RAM on each of its eight channel cards, all the Series III's sample data is stored in a common 14Megabytes of RAM. The above-mentioned waveform processor card handles the transfer of samples to the dual-channel output cards. This allows for great flexibility in determining the number and duration of samples that are to be held in memory.

Voice organisation has been expanded as a direct result of the new massive storage capacity. At the highest level is the System, which consists of Instruments, which in turn consist of Voices, which in turn consist of up to 128 Subvoices, or individual samples. The Instrument is what appears on the keyboard; the Voices which make up each Instrument are assigned an 'Nphony' value (this term is retained from the II, and refers to the number of Fairlight voices, up to the maximum 16). You can have one 16-voice polyphonic Voice or 16 monophonic Voices, or any combination in between. Voice layering depends on how many Voices are allocated to an Instrument – two Voices give you a simple dual voicing.

But the organisation is a lot more versatile than that. For each Voice, you can allocate as many as 128 samples across (and beyond) the keyboard. Thus you can have a different sample on each key, or indeed any combination that takes your fancy, from simple two-way split upwards. How many of these samples you can play at once depends on the 'Nphony' chosen for the overall Voice.

Whereas MIDI was an add-on to the Series II, it's been fully integrated into the new system. And with three MIDI Ins and four MIDI Outs lurking on the main unit's rear panel, this is unlikely to be a half-hearted implementation. As noted earlier, one Instrument can be played from the CMI keyboard at a time, but several Instruments can be resident in memory as part of a System. However, using the MIDI inputs (for instruments or sequencers) it's possible to play all the Instruments simultaneously, within the Fairlight's 16-voice limit. It's also possible to patch any input channel (MIDI or CMI) to any output channel (MIDI or slave CMIs). The range of possibilities is vast.

The Series III's version of MIDI is also closely tied in with the new machine's highly specified 80-track CAPS sequencer. With four MIDI Outs, the latest Fairlight can accommodate up to 64 separate channels of MIDI data, which could in turn account for 64 of CAPS' 80 polyphonic tracks. That should provide more than enough scope for most people, and offers more than enough channels for the inclusion of multitimbral MIDI instruments, which are starting to become more common.

Continuing the sequencing theme, we find the Series II's Page R has been so phenomenally successful, it would have been inconceivable for it to be omitted on the Series III. It's now known as the Rhythm Sequencer, and is 16-voice polyphonic, with the voices structured as they are for Nphony; in other words, if you have a four-voice piano you can sequence it (in real or step time) in that format, though you can also choose to work on voices monophonically. In most other respects, though, the Rhythm Sequencer is unchanged from its predecessor. This applies also to the song construction page, where songs are built up from Sequencer patterns. There are 26 sections, each of which can chain as many as 255 patterns; these sections are in turn chained into songs, with each section capable of being repeated up to 127 times, or infinitely.

The centrepiece of the new Fairlight's sequencing power is undeniably CAPS, though. CAPS stands for Composer/Arranger/Performer/Sequencer, and sad to say, the software has yet to be seen in finished format. In fact, information on the system is extremely scarce. Apparently, it'll be an 80-track system featuring on-screen music notation, and will include MCL (Music Composition Language) in its array of facilities. It will be SMPTE-compatible (as the Rhythm Sequencer is now), and files will be interchangeable between the Rhythm Sequencer and CAPS.

FUTURE options will include sample-to-disk (stereo or mono, 8- or 16-bit), music printing, a film music processor based on SMPTE, and a facility for connecting a whole gaggle of Series III slave ▶

► units, should your wallet be able to take the strain.

As well as MIDI interfacing, the Series III has a Click Out (which can be set in software to any frequency known to man), four Clock Outs (ditto), a metronome output, Roland DIN sync and SMPTE In and Out. Also included is an SCSI (Small Computer System Interface) connector. SCSI is an industry standard interface for connecting computers and peripherals, and in the Series III's case will allow for the connection of up to four slave Fairlight units, a second hard disk and optical disk storage. This last option, available towards the end of the year, will apparently be of the Write Once Read Many – WORM – type, and will offer storage capacity in the gigabyte league. WORM disks (of all the great Fairlight acronyms, WORM is the greatest) are currently the nearest anyone has got to read/write optical storage, and in the Fairlight's context, will be best suited to master recordings.

The front end of all this increased power has inevitably undergone some changes as well, though there's a lot that'll be familiar (or at least half-familiar) to existing Fairlight users. Essentially, you still work within a page-based system, though windowing techniques have been adopted for the ever-useful Help pages and for disk directory listings, and the pages themselves are constructed of windows.

At the moment there are six pages: Page One, FFT (Fast Fourier Transform), FX, Sample, WE (Waveform Edit) and RS (Rhythm Sequencer), though some of these are further broken down into subpages.

Page One is where you define voice organisation and MIDI Input and Output routings. The FX page allows you to define parameters for individual Voices and Subvoices, while a subpage allows subvoices to be mapped onto the keyboard. The WE page lets you zero in on any section of a waveform for editing purposes (inverting, reversing, zeroing, rotating and so forth). A Fairlight wouldn't be a Fairlight without Fast Fourier Transforms, and the III offers increased power in this area, for whereas the Series II could handle 32 harmonics and had a fixed phase, its successor has a mind-boggling 255 harmonics, while control over both amplitude and phase of each harmonic is possible. As it turns out, the FFT page is an amalgamation of several pages from the Series II, including waveform drawing and display along with harmonic 'faders' on screen.

It's not possible, within the confines of this introduction, to do more than scratch the surface of the new Fairlight's capabilities. But one thing is clear. Fairlight have reaffirmed their superpower status with a machine that sets new, higher standards in sample quality and quantity (both excellent) and, just as important, in sequencing power. The Australians have rightly perceived that an instrument in the Series III's category should offer a powerful sequencing section that'll incorporate any number of other instruments via MIDI, giving it access to and control over a sound section far beyond its own capacity.

Thus the new Fairlight differs from its predecessor in being not only a powerful sampling instrument in its own right, but also the centrepiece of any music production environment.

Wonder how long it's going to take everyone else to catch up this time. ■ ***Simon Trask***

More from ***Syco, 20 Conduit Place, London W2 1HS ☎ 01-724 2451***

DISTINCTIONS

between the Series III Fairlight and PPG's Realizer can be drawn quite easily. Whereas the new CMI represents the refinement of well established techniques, the upgrading of a machine already accepted and respected by the industry it serves, the Realizer is a ground-breaker, an innovation made up not of tried and tested building blocks, but of many smaller innovations.

That does nothing to detract from the Series III. For thousands of committed Fairlight users the world over, it will have no competition. Indeed, it's a little foolish to assume the two systems are competitors at all, since although their musical goals are similar, their ways of achieving those goals are almost entirely different.

Technologically, the Realizer's biggest leap forward is its independence of electronic hardware. For although it requires a fair chunk of digital memory and considerable processing power to carry out its tasks, all those tasks are carried out in software – including the sound-creation process itself. The Realizer has no oscillators or filters in the conventional sense, and little in the way of recognisable synthesiser hardware. Each sound is produced using eight software-controlled signal processors, and outputted via 16-bit digital-to-analogue convertors.

PPG's transition into software has been made for the excellent and rather obvious reason that, if a machine's capabilities are defined by the software that controls it, those capabilities can be altered and extended at any time simply by writing new programs. The Realizer, then, is the first computer musical instrument that truly deserves to be called open-ended. No hardware upgrades should ever be required once the basic system has been purchased, unless you suddenly decide you want more memory space or processing power.

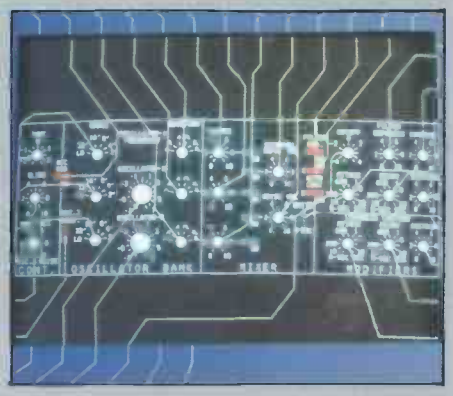
The Realizer's functions can be divided conveniently into three groups. The first of these covers sound-creation, an exclusively digital process which, as we've seen, is dependent entirely on the software programmed into the system. Theoretically, it should be possible to configure the sound-creating section in any way you choose – established or otherwise. Altering details of each configuration is something that can be performed directly from the Realizer's control panel (see later), but initiating new systems requires both a detailed knowledge of the arithmetical principles involved, and the programming technique necessary to stir the PPG's 68000-based signal-processing hardware into action in a musically useful way.

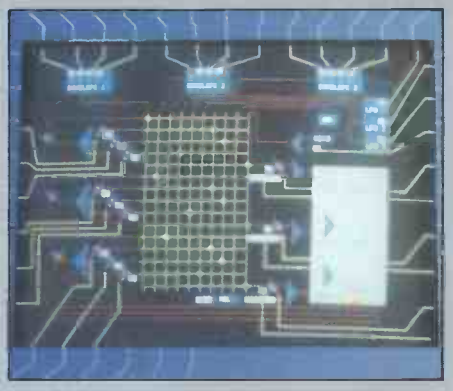
Thus far, the Germans have written software for two sound-generating configurations, one a carbon copy of the Minimoog's synth section, the other an FM system loosely based on that used by the Yamaha DX series.

The Realizer also has facilities for digital real-time sound modulation. Its software-controlled effects processors are capable theoretically of modulating any sound source that can be converted into digital form and fed into the system, and again, the section benefits hugely from being based in software. Traditional effects like reverb, repeat echo, phasing, flanging, chorus and so on make only a small part of what the Realizer is capable of doing to a digital signal, though it should be pointed out that PPG's software writers have yet to tackle the modulation side of things in any great depth.

Third and last on the list of Realizer possibilities is

Oddball PPG Realizer ***also has deceptive exterior; complete software control means machine is potentially capable of replacing most other hi-tech musical instruments – at a price***





Colour screen displays ***show two alternative sound configurations, a Minimoog replica and an FM-based system; clever graphics are complemented by easy-to-use analogue controllers, user-assignable to any parameter***

digital recording. With the help of its built-in hard disk unit (more later), the Realizer can store 12 minutes of music in mono, six in stereo, and three in four-track format, all at a sampling rate of 40kHz. All recordings can be synchronised with the integrated PPG MIDI Multitrack Sequencer.

MORE exciting than these sections individually, however, is the way their building blocks can be combined and routed in any order you wish. A typical configuration employing the capabilities of all three sections could involve two Minimoog voices, a single FM voice, a couple of PPG Wave voices and three sampled sounds, routed through a complex modulation section, and sent out on separate MIDI channels. The vast array of routing permutations conjures up visions of FM voices being routed through analogue synth filters, repeat echoes being modulated by different rates of chorus effects, and guitar samples being played through distortion modules set up to simulate (and improve upon) the action of a traditional valve amp.

Externally, the Realizer is made up of two self-contained units. The first of these is a 6U-high rack-mounting module, which houses all the sound-generating electronics and has an 85Mbyte hard disk unit (derived from PPG's new HDU storage system) built in.

The second unit, illustrated here, is the Realizer board, best described as the system's remote control module. The board looks unconventional, but for a good reason: unlike almost every remote controller currently marketed, the Realizer unit incorporates a wide selection of analogue controls that enable the system's software to be manipulated in a manner most musicians, engineers and producers are already familiar with.

The unit is dominated by a 14-inch, 16-colour monitor of high resolution, on which all the Realizer's possible processing configurations can be displayed. Surrounding the screen are no fewer than 37 analogue controllers (six sliders, 31 rotaries), all user-programmable to perform different functions, depending on the software currently in use. A separate numeric keypad caters for other specific programming requirements, and a graphic pad controller provides a precise means of controlling system configurations direct from the screen display.

The best thing about the Realizer's control unit is that, as long as the software is sympathetically written, it isn't too far removed from analogue front panel designs. Indeed, PPG's Minimoog software package includes a screen display that is the exact equivalent of the original synth front panel, with each control represented on screen and parameters adjusted using the sliders and rotary pots. FM configurations look less inviting, but they're still a big improvement on the almost total lack of visual feedback offered by most modern digital instruments, and like everything else on the Realizer, they benefit enormously from being represented in colour.

The present state of the Realizer is nothing like as finished as that of the new Fairlight. PPG say most of the hardware is complete, leaving software writing as the main area for further development before the system is ready to go on sale. When it does become available, the Realizer is expected to sell at something in the region of £30,000-£40,000. Not cheap, I grant you, but considering the amount of R&D that must already have gone into developing the Realizer, and the fact that any updates will be software-based and therefore quite affordable, the system looks conspicuously good value.

UNLIKE the new Fairlight, the Realizer is intended as an all-singing, all-dancing music production system that will effectively take the place of most other hi-tech musical instruments, not to mention quite a few outboard signal processors. It will be MIDI-compatible, however, so that you'll be able to control Realizer voices from a dynamic keyboard – with just about any split/layer arrangement you can think of. Not unnaturally, PPG suggest their own PRK as the ideal black-and-white partner.

Other outside-world connections include sockets for footpedals (software-assignable to any parameter), and external audio inputs for those heathens interested in using the Realizer to modulate 'ordinary' music signals such as those from an electric guitar or mic input.

No external storage facilities are deemed necessary, since the Realizer's hard disk unit is capable of storing not just sequencer and digital recording data, but also sound patches, routing configurations, and complete operating systems.

The mere idea of a central, sophisticated music production system capable of doing the job of many smaller units is certainly appealing. Especially when that system is as open-ended as the Realizer. It's difficult to envisage many users writing much of their own software, let alone designing entire sound-creation systems derived from complex arithmetical formulae. But the potential is there, and if the Germans can develop software quickly and sympathetically enough, there should be no shortage of takers for each new package.

Yet PPG's real achievement lies not with developing a highly flexible, software-based computer music system. That has been done before, and the principle is now being adopted by a number of mass-market companies for use in much less ambitious machinery – witness Akai's range of systems disks for their forthcoming S900 sampler, and Yamaha's software-inspired manipulation of delay technology in the SPX90 multi-effects processor.

What's surprising, and at the same time extremely welcome, is the extent to which the Realizer's designers have pursued the concept of user-friendliness. Gone are the unwieldy programming languages, the tedious digital parameter access systems, and the uncommunicative screen displays that have prevented so many computer music systems – at all price levels – from being really straightforward and 'natural' to use. In their place is a set of controls familiar to anybody who's meddled with an old monosynth or spent time behind a mixer, coupled with the most appealing set of screen graphics this writer has ever seen.

At a single stroke, the Realizer takes the flexibility of old patchbay-style synths, adds the modern technological benefits of digital signal processing and sampling and supreme 16-bit sound quality, and puts the whole lot in a package that's more accessible than most current budget polysynths. Or, as PPG put it so charmingly in their own literature, 'there is no discrepancy between what you touch, see and hear – it is just one harmonious whole.'

Hear, hear. ■ ***Dan Goldstein***

More from ***Turnkey, Brent View Road, London NW9 7EL ☎ 01-202 4366***

IMAGINATION

could make a star of you

Belouis Some spends his nights in nightclubs and his days at 'Top Of The Pops', stars in controversial videos and loves sequencers, but claims all he really wants to do is write classic songs. Interview *Tim Goodyer*

Maybe I should call him 'the late Belouis Some'. Not in any musical sense, you understand, but here I am sitting in the Parlophone press office, and he's over an hour late. This is the second attempt I've made to interview him, too: the first meeting was aborted when a *Top Of The Pops* appearance beckoned.

But such is a journalist's lot, and my patience is duly rewarded by the arrival of an apologetic Neville Keighley, aka Belouis Some. It's difficult not to forgive him his tardiness because he's basically, well, a nice guy.

It turns out that one of the things that's delayed him on this occasion is the visual presentation of his band.

'They looked so awful on *Top Of The Pops* that I've been trying to dress them', he explains. 'But they'll ring up and say: "I don't like the colour of this belt", so I tell them to get another and they want to know what colour *that* one should be! That's what's been happening all morning.'

But Keighley the artist is not to be taken that lightly. He classifies himself primarily as a songwriter,

and cares passionately about his craft.

'I'm very serious about my music – the music is the most important thing', he says. 'I started writing at about 18, before I left school. I suppose I'd call that my apprenticeship, but even then I wanted to write classic songs. I suppose I spent about two years sat at home writing before I actually got up and did anything else at all.'

In Keighley's case, the gentle art of songwriting takes place on an acoustic guitar, and the writer claims to have little technical expertise, and even less musical understanding.

'The rest of the guys in the band hate me because I'm so ignorant, but I really think it's a good thing. You see, I think music should come from the heart and not be contrived, so I do all sorts of unorthodox things because they feel right. They'll say: "You can't put an F sharp after an E minor there", but if that's the way it feels to me, then that's how I'll do it. It does lead to some things that trip the band up, though. For example, there's one extra bar in the first verse of 'Jerusalem' that someone always manages to forget about live.'

Neville Keighley *is* Belouis Some, the band having been arranged around one man and his songs. Songwriters that work independently whilst maintaining some semblance of quality control are few and far between, so it comes as a pleasant surprise that the first Belouis Some album *Some People* is such a mature work, full of catchy melodies, neat modern arrangements and unexpected changes of mood.

'When I first started writing, solo acts were pretty unusual. But it's better this way because I'm impossible to work with: I have to have my own way all the time. When I write a new song I play it through to the band and then leave them to sort it out on their own.

'But I don't really think *Some People* is a particularly mature album, because it's a collection of songs that were written over quite a long period of time. Take the 'Imagination' lyric: "She lit a cigarette, both hands behind her back"...I can remember the imagery behind that.'

Personally I disagree; in spite of its confused, disjointed background, there are few albums that possess the coherence of thought that *Some People* displays so well. Keighley tenders a possible explanation: 'I usually write from a lyrical idea, but I write both the music and lyrics together, so they develop at the same time.'

Those with a finger on the popular pulse will probably have spotted that the success recently enjoyed by the Belouis Some single 'Imagination' hasn't been won on its first release. Even the accompaniment of a controversial promo video – which received just a solitary airing on Channel 4 – failed to make an impact when the song made its first vinyl appearance. But Keighley's faith in the song is matched by an unrepentant attitude to its promotion.

'I believe 'Imagination' is a classic song', he asserts. 'I think it deserved another chance.'

Surely the video must have affected the song's chances originally?

'No. I think it will have been seen by plenty of people, because it's a favourite request in clubs showing videos or with video jukeboxes.'

Certainly, the song was a successful dancefloor single. It climbed high in the American dance charts as well as becoming a nightclub favourite in Britain on its initial release.

Yet for an artist who spends a lot of his time clubbing and considers his vocation to be that of dance craftsman, Keighley shows scant regard for technological institutions like click-tracks and sync codes.

'I've often had DJs tell me they can't mix in and out of 'Imagination' because the speed fluctuates too much. We never used a click-track to record it because the song has a natural pace, and variations in that pace. It also has a natural length: I know a pop single is meant to be a three-minute affair but 'Imagination' works best at around six. That was the way it was recorded, then we edited it down to three minutes for the seven-inch version. Of course, live it can be anything from three minutes to 20 minutes, depending on the audience response.'

Keighley declares a general ignorance of modern technology and its workings, yet refers continually to hi-tech synthesisers, and odd details – like programming LinnDrums – keep slipping out as we talk. He sees synths as playing an important role in shaping the texture of his music and adding new tonal colours, and has pretty definite ideas concerning what he likes to see as responsible for those colours.

"We were using a DX7 for some of the basslines, but ended up replacing them with an old MiniMoog because the sound was so much better."

'I like the PPG Waveterm and the Jupiter 8, though I'm not so keen on the JX8P or the Prophet 5... you'll hate me for this, but I just don't like the knobs on the Prophet.

'We were using a DX7 for some of the basslines but it sounded awful, so we ended up replacing them with an old MiniMoog because the sound is so much better.'

The man's enthusiasm for electronics extends as far as the ubiquitous drum machine, but stops just short of recording with it.

'I sometimes write using a LinnDrum, but in general I don't like drum machines much – they sound too dead. I do quite like the Roland TR707 because of the way you can play off the buttons live, but it still doesn't replace a real kit.

'We did 'Imagination' loads of times with a drum machine, but it only came to life when Tony Thompson played on it. The bassline's a real killer, but it worked once that snare sound went in with it.

'I'm not a great fan of sync codes. I actually wiped the Linn code off one of the masters because I wanted an extra track. Then, when we came to remix it for a 12-inch, I was in trouble.

'I love sequencers, though. We haven't used them on *Some People* but I expect they'll be on the next album.'

But that'll mean using sync ▶

► codes. Oh, well...

'What I don't like is technology being used to support a bad song. I don't like the idea of a sequencer being called in to beef up a song that's flagging. It's a bit like using a key change after the middle eight – and I gave up using key changes years ago.'

"I don't like technology being used to support a bad song, like a sequencer beefing up a song that's flagging. It's like using a key change after the middle eight."

In keeping with Keighley's studio attitude, the live Belouis Some is just that: live, with not a backing tape or sequencer to be found.

Although his name is nowhere to be found on the sleeve of *Some People*, the man responsible for the keyboard work on these live ventures is session ivory-tinkler Peter Oxendale. His is a name that'll be familiar to anyone who's paid attention to the live line-up of Frankie Goes To Hollywood, among many others. He's currently busy rehearsing with the remainder of Belouis Some – the band, that is.

'It's quite a straightforward setup live', says Oxendale. 'I'm using a Jupiter 8, a Korg DW8000, a Poly 800 with two EX800 expanders, a Korg CX3 and a DX7 MIDI'd to a TX rack. I'm using MIDI quite a lot, beefing up the programs in the synths and expanders. I'm hoping to add a couple of SQD1 sequencers and a couple of sampling modules to the list soon, as well.'

Oxendale first met up with Keighley when the latter was touring as support to FGTH. The keyboardsman was duly impressed by the material the singer had written, and a couple of songs in particular took his attention: 'Imagination' and the troublesome 'Jerusalem'... Oxendale's version of that particular story is different.

'It's not us that get it wrong' he claims. 'Neville *always* forgets that extra bar!'

He has an alternative version of the clothes story, too.

'It's awful: the band do all the hard work while Neville spends his time out buying clothes and posing in wine bars.' Proof, if any were necessary, that being a session keyboard player can be No Fun.

On a superficial level, there's a close similarity between Keighley's work and that of one David Bowie. To make matters worse, the sleeve of *Some People* lists some of Bowie's regular musicians as having participated in its realisation. Keighley is no stranger to comparisons with the Thin White Duke, and isn't intimidated by them, either.

'I think everyone who's heard Bowie has been influenced by him – and Marc Bolan and the whole glam-rock thing. Anyone that isn't is either a liar or a fool.

'I went to see Simple Minds play the other day, and I was thinking how much Jim Kerr's voice reminded me of Lou Reed. Then it occurred to me that there are only so many styles of singing you can adopt, so it's inevitable that you're going to sound like someone.'

And as for those Bowie musicians...

'Although it was really great for me to work with those guys, I only got into it by accident. Someone I knew reckoned he knew Carlos Alomar – actually, he just introduced himself at a party, but he agreed to do it anyway. Then Earl Slick just happened to be working at the same studio and they ran into each other, so there are a couple of really good slick guitar solos on the album.

'Anyway, I said to Carlos: "You're not going to make it sound just like Bowie, are you?", and he told me he was hardly likely to go and do that when he's been working with Bowie himself for eight years. He's worked on the songs with me because he believes in them.'

Some People have all the luck.

Belouis Some's next move is to release the title track from the LP – also a re-release – as a single and then re-launch the *Some People* album. Then it's a follow-up LP, for which Keighley has already laid the foundations.

'I'll be going back to New York to record and I hope Bernard Edwards will be producing, though that's not sorted out yet. I'll go into the studio with about nine songs ready written and I intend to write a couple more whilst I'm there, just on the excitement of the occasion – those will probably turn out to be the strongest songs on the album. But I really want the next LP to be an absolute classic.'

It'll be interesting, hearing exactly what Neville Keighley thinks a classic Belouis Some album should sound like. ■

AS GOES THE MUSIC...

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SECOND TIME AROUND

After a successful two years at the top of the budget synthesiser tree, Korg's Poly 800 has been given a better spec, a new colour scheme and a programmable DDL. Is it still the cheap keyboard to beat? ***Dan Goldstein***

For some reason not unconnected with the success rate of new keyboards, few electronic musical instruments ever get as far as being turned into a MkII version. The Korg Poly 800 is one that has, because as modern keyboards go, it *has* been a great success.

When it was introduced two years ago, the Poly 800 could justifiably lay claim to the title 'world's first budget polysynth'. For less than £600, it offered a fully programmable, eight-voice analogue synthesiser section, a built-in polyphonic sequencer, MIDI, and quite a bit more besides. To thousands of musicians all over the world, it was an irresistible package. And even now, when the MkII model has already entered production, many Korg distributors sell as many of the original Poly 800s as they can get their hands on.

Yet for all that the first machine introduced the idea of playing synth sounds polyphonically to a whole new generation of keyboardists, it was far from perfect. Economies had been made to get the selling price down, and the first Poly 800 sounded a little on the over-rounded side (not enough sparkle of the 'digital' kind), and had a MIDI implementation way behind what we would come to expect within a few short months (the 800 was Korg's first attempt at fitting the dreaded five-pin DIN).

Twenty-four months on, and Korg have given their budget success story a visual revamp, and made some far-reaching changes inside, too. Most significant of these is the addition of a digital delay to the Poly 800's list of programmable facilities. Korg first used this idea on the upmarket DW8000, and have cut no obvious corners in transferring it to the cheaper machine. The DDL isn't a simple MIDI device that works by delaying note-on signals; it's a fully-fledged delay similar to that built into separate, dedicated rack units costing over £200. Programmable parameters are delay time (maximum just over a second, variable over 100 steps), feedback, modulation frequency/intensity and overall effect level.

In addition to the DDL, Korg have fitted programmable bass and treble controls which act on the final audio signal, rather than on the output of individual oscillators.

In most other respects, the Poly 800's synth circuitry remains as before. That means two eight-voice digitally controlled oscillator sections, each with a choice of square and sawtooth waveshapes, switchable octave ranges and programmable output levels. Both DCO sections are routed through a single VCF, whose variable parameters include cutoff frequency (also with a handy 0-99 resolution), resonance, keyboard tracking, and switchable single or multiple triggering. There's a white noise section that now has a useful – and unusual – detuning facility; three separate digital envelope generators, all with six stages in the Korg tradition, acting on DCO1, DCO2 and VCF/noise respectively; and a modulation generator (Korg parlance for an LFO) unchanged in spec from the Mk1 synth.

You select parameters using the Prog/Para switch in conjunction with the front panel's numeric keypad, adjusting values with a pair of up/down switches. The process is the same adopted for every Korg digital access synth I can think of, and in the Poly 800's case, is aided by separate two-digit

LED displays for program, parameter and parameter value figures. Also carried over from other members of the Korg family is the Bank Hold facility, which keeps the first digit of the program/parameter constant while you use the keypad to step through sounds/facilities of the same bank. This saves a fair bit of key-pressing, and helps make what is undeniably an awkward system of programming that little bit smoother in use.

All parameters, their numbers, and their range of values are indicated on the MkII's parameter list, which takes up the bulk of the front panel and which, thanks to the new, more subdued colour scheme and a bit of reorganisation, is now much easier to get to grips with than it was on the original instrument.

The MkII arrives, as its predecessor did, with 64 sounds already recorded into memory. To overwrite any of them with a patch of your own, you simply press the red Write button on the Korg's display panel, remembering first to disable memory protection by flicking the appropriate rear-mounted switch. If you need more space than the 64 memory locations will provide, the Poly 800 lets you store the entire contents of its memory (sounds and sequences) on cassette – not the quickest, most reliable storage medium in the world, but certainly cheap.

Preset sounds weren't a strong point of the MkI Poly 800. For reasons best known to themselves, Korg's programmers gave the original instrument 64 voices that simply didn't span a wide enough sonic vocabulary. Lots of wah-wah organs, synthy strings and grizzly guitar impressions, but precious little in the way of clean leadline voices, tuned percussion sounds or ethereal 'atmosphere' slices.

That mistake has been rectified on the new model, which displays a broader, more contemporary selection of sounds on power-up. Unlike the DW models, the Poly 800 doesn't list its presets on the front panel. Instead, they're shown on a chart at the back of the user manual, and a quick browse through the names shows the collection has a broader, more fashionable look to it. There's plenty of detuned oriental percussion, chiffed woodwind, and other-worldly chime noises, along with a slimmed-down group of conventional analogue poly patches, among them some warm, vibrant organ tones and silky strings replicas.

It's the percussive voices that do most to impress on first encounter, though, aided as they are by some clever programming of the built-in DDL. Somehow the 800II succeeds in sounding much bigger than its synth section suggests it should, largely because Korg's programmers have coaxed a wide range of treatments from the synth's delay circuit, from delicate repeat echoes to raunchy chorus effects.

However, all is not rosy in the 800II garden. Nothing has been done to endow the new model with a more comprehensive filter section, which means the Korg's shared filter has its work cut out trying to do justice to your playing technique. If you set it to multiple triggering, it retriggers the envelope of all held notes every time you hit a new one; set it to single triggering, and it simply ignores the attack stage of every new note played until you lift your fingers from the previous keys. It's a pity, really, that Korg should have spoiled the ship for a ha'porth of tar in this way, since I've no doubt a full complement of filters would have been a good deal cheaper to fit to the MkII than the DDL, say.

The other gripes don't need to be voiced quite so loudly. The four-octave keyboard can be limiting at times, even though its range can be transposed by an octave up or down, and the ivories' lack of sensitivity to initial velocity or aftertouch will also disappoint players used to tinkling something like a DX7 – as I was when the MkII Korg arrived for review.

But the cheapest Korg does more than simply generate clever noises for you to play from its keyboard. Its built-in polyphonic sequencer records up to 1000 notes in step time, and can be synced via MIDI to external drum machines and keyboard recorders – though unhappily, whilst the rest of the machine has been updated to both receive *and* transmit on any of 16 MIDI channels, the sequencer is stuck sending data out on channel 2. its chord memory can store any chord configuration you choose to input from the keyboard, then transpose it automatically as you play one note at a time. And its joystick performance control, in common with other Korg keyboards, is a versatile four-way affair acting on pitchbend (up/down), DCO modulation or VCF modulation, depending on the direction you push it in.

So where, exactly, does the Poly 800 stand, now that two years' worth of improvements have been made to it, while two years of changes have taken place in the budget synth market? Actually, it stands the test of time rather well. It sounds a good deal more 'expensive' than it did in its MkI incarnation, its MIDI facilities have been improved, and its built-in DDL is an ingenious and extremely useful addition that none of its competitors can provide.

If I wanted to be cynical, I'd say the Poly 800II has had a number of new features tacked onto it to cure the ills of its basic specification, rather than prevent them taking effect in the first place. But while it's true to say that the one-filter limitation is *still* a real pain, the new Korg is too competent in other areas to make the omission a critical one.

Pleasant to listen to, convenient to program, and easy to get on with in general, the new Poly 800 should take over where its predecessor left off: making analogue synthesis a lot of new friends, without giving them permanent overdrafts. ■

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LANGUAGE...

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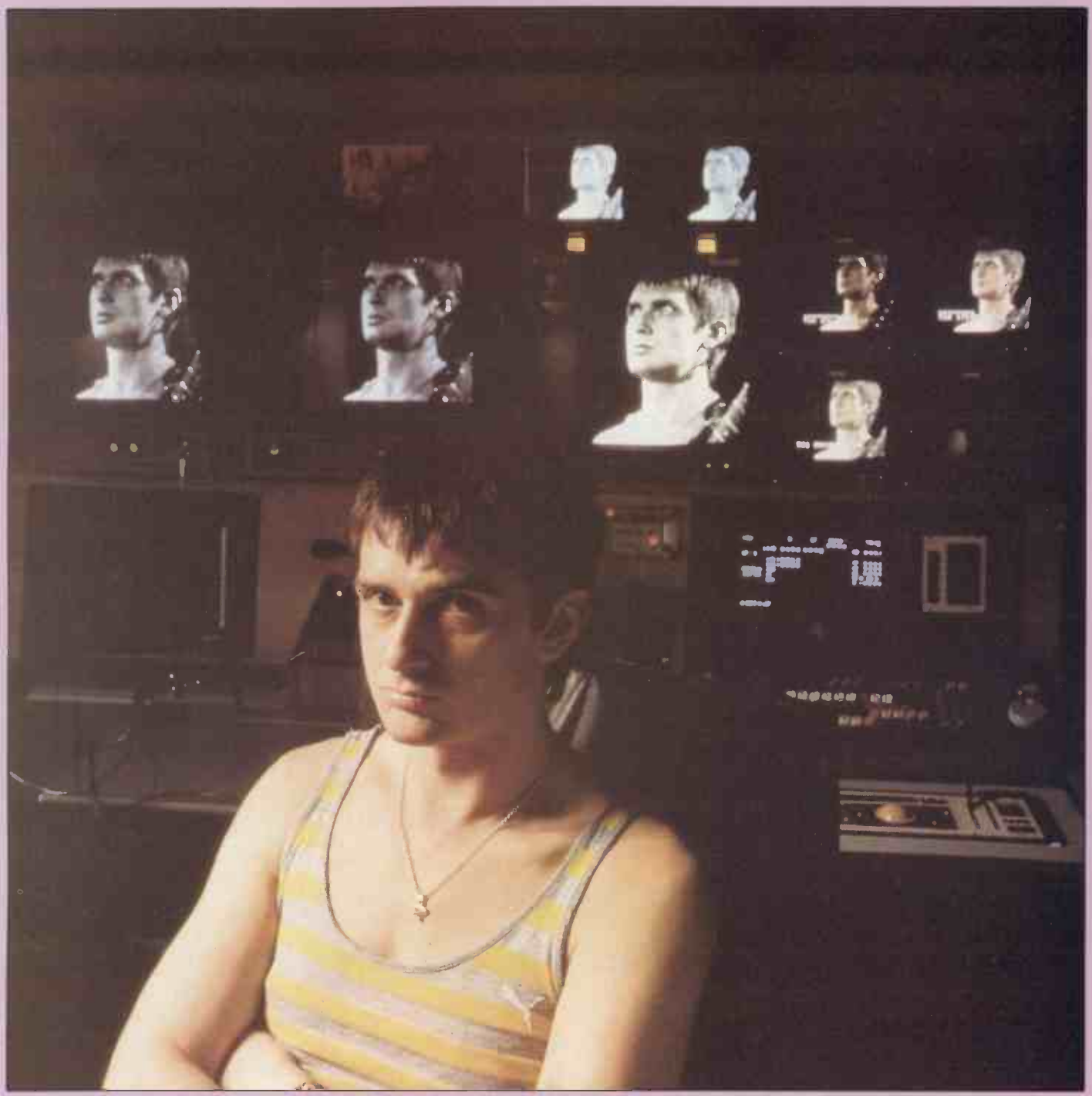

Mike Oldfield has dominated contemporary instrumental music for ten years. Now he's expanded his home recording studio to incorporate video facilities, and produced the world's first single to have music and video prepared for it at the same time. Interview Annabel Scott

A year ago, Mike Oldfield would have been the first to admit he was completely in the dark about video. And that's understandable – because even if you lose track after 'Tubular Bells', you'll know Oldfield has risen to fame primarily as a uniquely talented multi-instrumentalist, a composer and musician who could turn his hand to almost anything and make it work. Since the release of that record-breaking album, Oldfield has developed his musical style enormously, lived in Switzerland as a tax exile, toured Europe and returned to England to re-establish his 24-track studio in an impressive mansion house near London.

But recently, Oldfield has entered a new phase of innovation that's cost him nearly an album's worth of earnings to get off the ground.

'If you want to know how expensive video is', he deadpans, 'just think about sound recording and add a couple of noughts to everything'.

Oldfield's recent burst of interest in video dates from just over a year ago when he was first shown the Fairlight Computer Video Instrument at a convention in Montreux. 'I've been interested in video for about four years', he says, 'though I'd always had an interest in Impressionist art. But in the past I didn't have much control over the content of my videos; I didn't want them to be tacked on as an afterthought to the singles, with all the cuts on the wrong beat.

'When I saw the Fairlight CVI, I realised that this was something I had to get into. I looked around a little to find out exactly what was on the market, and I thought about using high-band U-matic video machines. But in the end we decided that if it was worth doing at all, it ought to be done properly.'

'Doing it properly' involved abandoning the idea of using the half-inch U-matic cassette format, relegating the Fairlight CVI to a neglected corner ('it's a great machine, but the resolution's just too low') and investing in four Sony one-inch open-reel video machines. As for effects, three main units did the trick – the Quantel Mirage, the Aurora, and the Ultimatte. Total cost with installation – almost £2million.

More details on the video machines later, but first a look at just what it takes to add video facilities to an already impressive – if small – 24-track facility. It's worth bearing in mind that, being built into an upstairs room in his house, Oldfield's setup probably qualifies as the most expensive bedroom studio in the world...

Over the last couple of years, Oldfield's music has been firmly based around the Fairlight CMI. It's most in evidence on 'Discovery' and on the soundtrack for 'The Killing Fields'. He has a second Fairlight for live work, plus a Kurzweil, an Oberheim OBX with DSX sequencer and DMX drum machine, a trusty Roland VP330 Vocoder Plus, an ancient Solina string synth and a couple of other keyboards in the studio.

These form an arc around a rather aged-looking Neve mixing desk (updated with the latest NECAM automation last year), with an Ampex 124 24-track sitting at the back of the studio and Oldfield's guitar collection living in a room next door.

Either side of the desk are racks of effects and switching units – audio on the right, video on the left. The audio effects rack is surprisingly restrained – just AMS and Quantec digital reverbs, and EMT 250 plate reverb, Kepex Gain Brain limiters and compressors, a valve limiter used mainly for bass guitars, a vocal stresser, a Korg SDD3000 digital delay and a Bel flanger.

"If you really want to know how expensive video is, just think about sound recording and add a couple of noughts to everything."

Oldfield has a studio assistant, but self-ops his recording sessions using various footswitch controllers – it's the way he's always worked. Now he can swing, instantly, from the audio desk and its associated synths to the video desk and its effects units. What was previously his piano booth off the studio floor has become a machine room for video tape recorders, with the Kurzweil now filling in for piano parts.

The studio floor is used for recording vocals, guitars and drums, but now has to double as a video studio floor, having a large cyclorama (backcloth) at one end and a ceiling-mounted Ikegami 79E camera and monitor in the centre. In the machine room are a Sony 2500 one-inch video machine, one slightly simpler Sony 2002, and two Sony 2000s. The 2000s lack a couple of facilities such as the ability to produce cell animation by recording a series of still frames, but that can be taken care of by the 2500 should Oldfield choose to use it.

He's the first to admit, though, that the transformation from audio to audio-visual wasn't quite as straightforward as had been planned.

'I didn't realise when we were going into video that all sorts of things count that didn't matter before – even the lengths of the cables we used and the type of air conditioning. Sometimes we spent two hours at a time on the phone to Sony when we had colour framing ►

problems – but luckily I knew F W O Bauch from their audio installations and they put all the video equipment in, and both Quantel and Sony were very helpful, too.'

In parallel with the Neve audio desk is a Grass Valley video mixing console, surrounded by monitors, Pro-Bel patch units and the aforementioned video effects units. Chief amongst these is the Quantel Mirage, a sophisticated frame manipulator based on a small mainframe computer located in a storeroom beneath the studio.

Oldfield explains. 'The Mirage is a frame store and manipulation device which is more use to me than something like the Bosch computer which does the Channel 4 logo, the BBC News animation and things like that. The Mirage takes an existing picture from a camera or a video machine and lets you manipulate its shape. I can write a little program, like a starburst or a moving tubular bell into it, and distort any picture into that shape.'

Next to the Mirage terminal and the CMX 340 Editor is the Aurora, an animated graphics generator that can create moving coloured lines, snowstorms, multiplied graphic characters and so on. It's often used to create a background for a piece of Mirage animation. The machine which allows this to happen is Ultimatte, the infamous 'blue screen' machine which removes any blue from a picture and superimposes what's left over a background of your choice. Which is why at one end of the studio floor, you'll find – you've guessed it – a large blue screen.

"The Quantel Mirage takes an existing picture and lets you manipulate its shape...so I can write a program, like a moving tubular bell, and distort any picture into that shape."

Apart from the main studio camera, Oldfield uses a portable one-inch Nagra/Ampex VPR5 system to collect video images from the outside world. As we'll see later, he put this system to good use for his video to 'Pictures in the Dark', his last single, which included images of his house, the moon, fireworks and rock pools.

Oldfield has access to one more video unit, the Bosch image generator, an immensely powerful and expensive unit which creates lifelike three-dimensional computer images from scratch. It's been used on everything from the Channel 4 logo to recent Dire Straits videos, and Oldfield (with the help of Peter Claridge from CAT Video Graphics) used it to create three-dimensional rooms, mazes and other figures for the 'Pictures In The Dark' promo.

'Pictures' combines the best of all three video effects units, placing Oldfield and singers Aled Jones and Anita Hegerland against a variety of animated backgrounds, combining them with computer animation, multiplying simple figures across the screen, and stacking video images in a breathtakingly impressive manner. Since only one or two video effects can be added at a time, creating this sort of video is a matter of repeatedly bouncing from one video machine to another, rather like recording multitrack music with just two cassette decks. Theoretically, this can be done about a dozen times before there's any noticeable loss of quality – the most complex section of the video is 15 layers deep.

'Working on the song and the pictures at the same time gives the piece a lot more artistic strength', claims Oldfield. 'On 'Pictures' I already had a lot of the elements of the video – like the spinning jug and the guitar – but I couldn't think of a way to combine them until I decided to write a song about dreams. That let us use almost any images we liked, so then Peter Claridge storyboarded the video.

'I'd been collecting some shots, like the moon and fireworks and the house, for a few months, and then we started by spinning the guitars and things on wires and modelling them into the Quantel.

'In the past I've always loved working in the country with the windows open, and of course this is a lovely working environment. But we were doing 16 hours a day on the video, and it doesn't make much difference where you are if you're working in a studio for 16 hours a day!'

As a song 'Pictures in the Dark' is fairly typical of recent Oldfield singles and a reasonable introduction to the man's work, even if the recent 'Essential' collection on Virgin shows how his style has developed up to this point. The long, complex pieces – 'Tubular Bells', 'Hergest Ridge', 'Ommadawn' and 'Incantations' – contrast markedly with the later, less symphonic albums such as 'Five Miles Out', 'QE2' and 'Discovery'. More

recently, Oldfield has developed a popular singles style on tracks such as 'Moonlight Shadow', 'Family Man' and now 'Pictures in the Dark'.

Does he feel the new digital music technology has changed the way he works?

'Not really. For instance, I'm still using a lot of guitar, and all the singles have a guitar solo. And I'm still recording and engineering myself, even though I do have some help on the video side of things.'

What about the predominance of sampling instruments like the Fairlight and Kurzweil? Have they changed Oldfield's approach to music? And have they presented him, a more than able musician, with any moral dilemmas?

'Well, I do take a lot of my own samples and usually make some at the end of a session from whatever instruments we've been using. For instance, I sampled Paddy Moloney's Irish pipes after one session, but I wouldn't use that sample to replace him as a player. I'd use it for a pipe-like backing chord, perhaps. I've also sampled a church organ we were using, but usually I like to set aside a special session if we're going to do any sampling.'

Whatever his musical and visual arrangements, Oldfield is glad to be back working at home. After all, the last couple of albums had been recorded in commercial studios in a variety of different countries...

'That was purely because I had to stay out of England for a while for tax purposes, which is why I didn't play here on the last tour. I lived in Switzerland for a year, but in the past I've always worked at home, originally at Througham. I had to move closer to London for business reasons, though, so now we have an office in the house for Oldfield Music and for Field Services, which hires out our live PA when we're not using it. It's a pretty large system – we have about 28 Eastlake studio monitors and we use Neumann studio mics on stage.'

Presumably, Oldfield is pleased with his current equipment roster. But does he feel he made any compromises on his first do-it-yourself video?

'No, we managed to realise everything I wanted to do. It's been very hard work, but I didn't want to compromise at all.

'There's nothing on the video side we have to change, though the Ultimatte means you have to plan mattes in advance and use up two machines. So we may get a high-band U-matic, because the quality of the colour information isn't important when you're creating matte shapes.

'On the audio side we've been linking everything up very successfully so far – except the Fairlight, which we have to use a timecode for. Before long I'll have a Series III Fairlight with SMPTE, and we'll link that to the Linn 9000 through MIDI to run all the other synthesisers.'

And future plans?

'I'd like to do more video work with Pete, and I've got a single planned with Jon Anderson. I think Pete's more or less taught me how to use the video equipment myself now, and of course I'd like to think about a whole album recorded simultaneously with a video. But that would take a long time – maybe a couple of years. If I'm lucky.' ■

"I sampled Paddy Moloney's Irish pipes after one session, but I wouldn't use that sample to replace him as a player: I'd use it for a pipe-like backing chord, perhaps."

DATAFILE

Mike Oldfield's Studio

Synthesisers
Fairlight CMI Series II×2, Kurzweil 250, Oberheim OBX, DSX, DMX, Linn 9000, ARP Solina, Roland VP330 Vocoder Plus, Roland SH101

Guitars
Fender Stratocaster, Gibson Les Paul Junior, Washburn semi-acoustic, Fender Telecaster, Fender Precision Bass, Gibson guitar customised by AC Zemaitis, acoustic bass, Gibson SG, Aria Pro II bass, Roland Bass synth controller, Fender Electric XII, MGO acoustic, banjo, mandolin

Audio
Neve console with NECAM automation, Ampex 124 tape machine, AMS and Quantec digital reverbs, EMT 250 plate reverb, Kepex Gain Brains, Korg SDD3000, valve limiters, vocal stresser, Bel flanger

Video
CMX 340 X editor, Quantel Mirage, Aurora, Ultimatte, Nagra/Ampex VPR5 portable, Sony 2000×2, Sony 2002, Sony 2500, Pro-Bel video patching, Ikegami 79E video camera

BEAUTY AND THE BEAT

Casio have taken the big leap forward and put the world's first affordable sampling drum machine into full production. To describe the new RZ1 as revolutionary would be an under-statement.

Dan Goldstein

At long last, somebody has produced an affordable sampling drum machine. It had to happen sooner or later, because the technology's been available for some while now, and the potential market for such a machine, I'd have thought, must be enormous.

It's the Japanese who've got there first, even though it was an American company, E-mu Systems, who produced the world's first generally available sampling beat box over a year ago: the Emulator SP12. Now, the SP12 is an extremely fine machine, and one that's being continually updated and improved to prevent it being made obsolete by developments in Tokyo. But in the end, nobody other than Casio had the foresight, the will, and the manpower to turn drum sampling from a £3000 exercise into a £300 one.

We're told that the Casio RZ1 will be in the shops imminently, but the first production shipment still eluded the UK division as this issue was being compiled, so we had to make do with a prototype for review purposes. It was covered in gaffa tape and mysterious coding written in indelible black ink (so *now* we know how the Frankfurt demos were done), and a few things rattled inside it every time you gave it a shake. But in most important respects, our RZ1 was the same as the machine you'll get in exchange for 350 of Her Majesty's highest-denomination coins in a couple of months' time.

Whereas it seems perfectly normal to market a sampling keyboard with nothing inside it but a great chunk of memory, Casio have obviously decided not to try selling a drum machine that doesn't have any drum sounds in it when you get it out of the box. Thus the RZ1 comes equipped with 12 percussion voices already sampled into ROM, where they are unerasable, unalterable and generally free from the fiddling of the average user. In a sense that's a shame, because it means only 25% of the RZ1's memory is available for storing sounds you've sampled yourself. A more adventurous (some would say foolish) marketing department would have given the machine a half-dozen or so RAM locations for user samples, instead of the four provided by the new Casio.

Of the dozen preset sounds, the ride cymbal, rimshot and cowbell are all superb, while the bass, snare, toms (three pitches) and hi-hats are better than OK. The crash cymbal suffers, as most short crash samples do, from not having enough memory to cope with the original's long natural decay, while the claps just don't have the presence of most competing versions. Popular fashion dictates that a handclap sample should contain a recording of *several* people clapping *almost* simultaneously, so that some sort of chorus effect is discernible; the RZ1's clap sample seems to have been taken with no more than three people clapping, which results in a thin, weedy sound more akin to that of a

typewriter than anything else.

Overall, the RZ1's voices don't possess the length or (more crucially) the bandwidth to make really impressive listening. They aren't as bright as those of Roland TR or Yamaha RX digital machines, but they're eminently usable nonetheless. And although you can do nothing onboard the RZ1 to adjust the sounds' pitch, envelope, or stereo position, the good news is that there are 10 individual audio outputs, each with an onboard level slider, mounted on the Casio's rear panel. Eight of these are assigned to the 12 preset drum sounds, so unless you want to make critical adjustments to the cowbell whilst leaving the crash cymbal (say) alone, you should have plenty of scope for trimming the rough edges off Casio's PCM voices.

But sampling is what most people will want the RZ1 for. The four memory locations have a capacity of 0.2seconds each, though you can loop all four to record one long sample lasting 0.8seconds. Sampling is eight-bit at a rate preset at 20kHz, and no bandwidth figures are available from Casio; my guess is that they wouldn't make terribly impressive reading for Emulator or Synclavier users (or Prophet 2000 users, for that matter), but that they will more than satisfy the needs of most musicians seeking a cheap, easy-to-use entry into percussion sampling.

Clearly, Casio have gone to great lengths to ensure sampling *is* very easy to achieve on the RZ1. Even the Art Editor managed a decent bottle-hit sample after just a couple of attempts; total time from microphone plug-in to successful sample – about 30 seconds.

Pressing the Sampling button in conjunction with one of the sample memory switches tells the RZ1 to expect an incoming signal, and where it should be put once it's been received. That incoming signal can arrive from either a mic or line input, with sampling level variable via a top-panel slider. The RZ1 incorporates an automatic triggering system (which can't be overridden) that ensures the machine begins recording as soon as a signal corresponding in strength with the Sampling Level setting is fed in. As soon as that happens, a red LED flashes for the duration of the recording, and the message SAMPLE OK appears in the Casio's LCD window.

That 'OK' message can be a little on the optimistic side, though. On many occasions during the review period, we found samples described by the Casio as OK were in fact distorted beyond all recognition; practice and a little caution do wonders to minimise this.

All things considered, the Casio stores competently-taken samples much more faithfully than its spec (not to mention its selling price) indicate it ought to. Noise stays at remarkably low levels even if signal quality is poor (from a cruddy mic, say), and the only thing that may disappoint users is that, contrary to what many may think, two-tenths of a second isn't really a very long time in which to store percussion sounds. Even if you manage to capture most of the signal you're after, chances are there won't be enough memory left to store any peripheral information like acoustic reverberation. To compensate partially for this, you can tailor the frequency content of each pair of samples using a rear-mounted rotary control – increasing the high frequencies naturally adds noise, but it does help to cure some of the dryness caused by the Casio's obviously limited sampling bandwidth.

Little of this seems significant, though, once you get down to the business of using your samples in the context of rhythm patterns and songs. Briefly, the RZ1 can record in either real or step time, stores up to 100 patterns and 20 songs (the latter with a maximum 99 steps each), and be programmed manually from the keys of a MIDI keyboard if you wish. Quantisation (or auto-compensation, as Casio call it) can be set to any of 10 values from a half-note to 1/96 of a note, and is switchable from the front panel; if you like the mistakes you made writing your patterns, you can hang on to them without fear of the machine's over-zealousness getting in the way.

When it comes to joining patterns together to form songs, the Casio provides the usual complement of insert, delete, chain and copy functions to ease the programmer's task, and all these are easily accessible from the front panel.

There are two things to be said on the subject of the RZ1's front panel, both of them favourable.

The first concerns the LCD window which, though not quite as comprehensive as Roland's splendid grid system, does a great job of informing you of what's going on inside the machine. When the RZ1 has been switched to play a song, for example, the display shows not only the song number, but also the pattern that's been reached at any given time, and the individual number of that pattern. It also shows tempo in beats per minute (variable between 40 and 250, incidentally) as soon as you vary playback speed with one of the dedicated controllers. The display's backlit, too, which is more than can be said for some.

The second point concerns the layout of switches and, more specifically, the sheer number of them. It's become fashionable to cut manufacturing costs by reducing the amount of controlling hardware fitted to hi-tech musical instruments, but with the RZ1, Casio have flown in the face of fashion by offering a fuller range of switches than any competing machine. Where most manufacturers would fit no more than a pair of increment/decrement switches for value adjustment, Casio fit just such a pair *and* a complete numeric keypad, which makes pattern selection and the like an absolute doddle. Other, more obscure functions have dedicated buttons all to themselves – like memory transfer to cassette, MIDI channel and clock selection, and tempo control. In fact, only a tiny number of the RZ1's controls serve dual purposes, so you never have to do much 'shifting' from one set of functions to another in the course of setting up, sampling or programming. When you consider there are plenty of other drum box manufacturers giving their switches three or four different tasks to perform, it's little wonder the Casio seems such a joy to use so quickly after you've freed it from its wrapping – and in our case, that's *without* an instruction manual of any description.

Moving momentarily back to the subject of sampling, the RZ1 – a mains-only machine – retains its sample memories during power-down, but requires the assistance of a cassette to remember any more; tape can also be used to store song, pattern, tempo and MIDI data, too.

There's nothing as hi-tech as a cartridge interface, though, and overall, you get the impression the Casio is a little xenophobic in its attitude to the outside world. MIDI is well catered for by In, Out and Thru sockets, and the machine should transmit and receive MIDI clock information without trouble. But there are no pre-MIDI syncing facilities to be had, and no means of syncing the RZ1 to tape, either. External triggering facilities are also conspicuous by their absence.

Yet despite these omissions, the RZ1 strikes almost the perfect balance between having the right sorts of facilities and bearing the right sort of price-tag. It's conceivable that some people will moan about the dullness of some of the preset sounds, and about the fact that you can't swap sound chips or cartridges in the Californian tradition. But when there are separate audio outputs to help cure the former ill, and four user sample locations to assist in rectifying the latter, there seems little reason to think the RZ1 will cause much genuine complaint.

In one, simple movement of design and marketing genius, Casio have brought drum sampling to the masses without burdening them with a machine that's awkward to use, or that makes too many compromises in sound quality. Finished in a case best described as an anonymous hybrid between everyone else's idea of what a drum machine should look like, the RZ1 looks set to make a big, big name for itself in a market already full to the brim with worthy instruments.

And the terrifying thing is, this is only Casio's *first* attempt at a dedicated drum machine. Goodness knows what the second one will be like. ■

Price *RRP £349 including VAT*
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VOX POP

The idea is sound enough, but does the world need another Commodore-based sampling system? After looking at the £300 Microvox, we conclude that it does.

Simon Trask

While dedicated samplers of the keyboard and rack-mounting varieties seem to be multiplying faster than you can say 'n-n-nineteen to the dozen', computer-based samplers remain few and far between.

That's not too surprising. Many computer-owning musicians are more interested in using their machine for sequencing, while the data-intensive nature of sampling doesn't sit too well with the limited memory of today's eight-bit home computers.

None of this has daunted British software house Supersoft, who recently brought out the Microvox Digital Sound Editor for the ever-popular Commodore 64. It's an impressive system, more versatile than Microsound's sampling package for the same micro (reviewed in E&MM June '85), and it represents an affordable introduction to sampling for those who can't contemplate buying the likes of an Akai S612 or a Mirage. It's playable via MIDI, so you can use it from a MIDI keyboard, sequencer or drum machine. But Supersoft have also considered non-MIDI musicians (known as 'aliens' in the trade); samples may be played over a three- to four-octave range from the 64's QWERTY keyboard, and this option has been made compatible with Commodore's overlay music keyboard, too.

But before you get too excited, I'll point out that unlike the above-mentioned dedicated instruments, the Microvox doesn't allow polyphonic playback of samples. What it does allow you to do is store as many as 16 samples in memory, and assign individual samples to any notes over the maximum four-octave playback range. Thus the Microvox can be played multitimbrally from a MIDI keyboard or the 64's QWERTY job – enabling you to create all sorts of multisamples, or double up percussive sounds with a MIDI drum machine. As well as being able to assign a sample to a note, you can also define the actual playback pitch of the sample – obviously useful for percussion sounds.

You can also select MIDI Mode 4 on the sampler. This allocates each of the 16 samples to one of the 16 MIDI channels (sample A to channel 1, and so on), all triggerable selectively – useful for sequencing.

It's worth bearing in mind that the Microvox's necessarily limited sample memory (just under 40K) won't magically expand as the number of your samples increases. As with any sampler (to one degree or another), you have to sacrifice sample duration and/or bandwidth in order to fit an increasing number of samples in. But then, if it's megabytes you're after, you have to spend megabucks, too.

Microvox is available in two versions: 1.2 and Pro, on disk and cartridge respectively. The former includes a 2000-note, single-track sequencer and a digital delay; the Pro version removes the sequencer but adds slightly longer sample times, more special effects, individual fine-tuning and volume setting of samples, response to velocity-sensitivity over MIDI (affecting sample volume and timbre independently or together) and auto-looping of samples. The Pro version is actually a £70 'upgrade' to 1.2, so you actually end up with both versions.

Background *"The data-intensive nature of sampling doesn't sit too well with the limited memory of today's eight-bit home computers – but this hasn't daunted Supersoft."*

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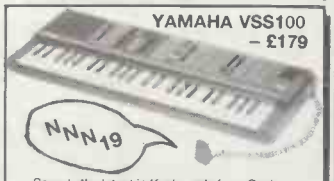

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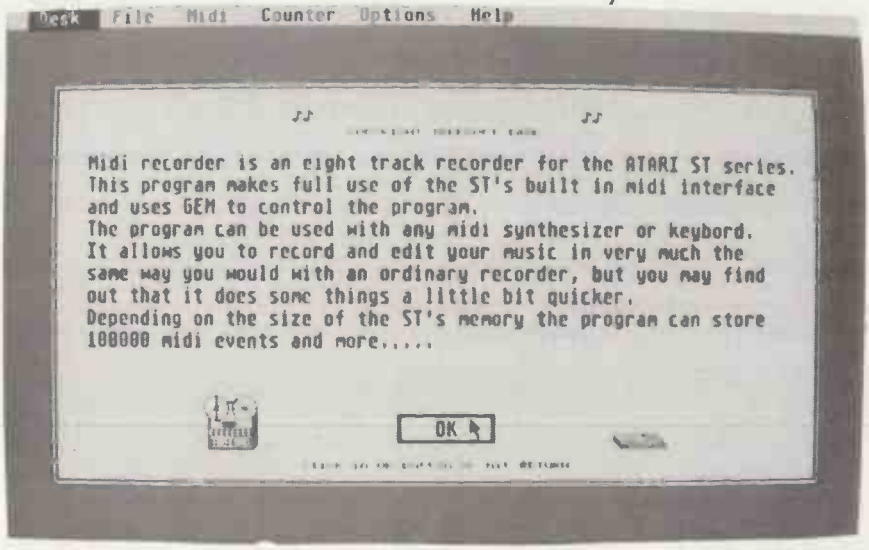

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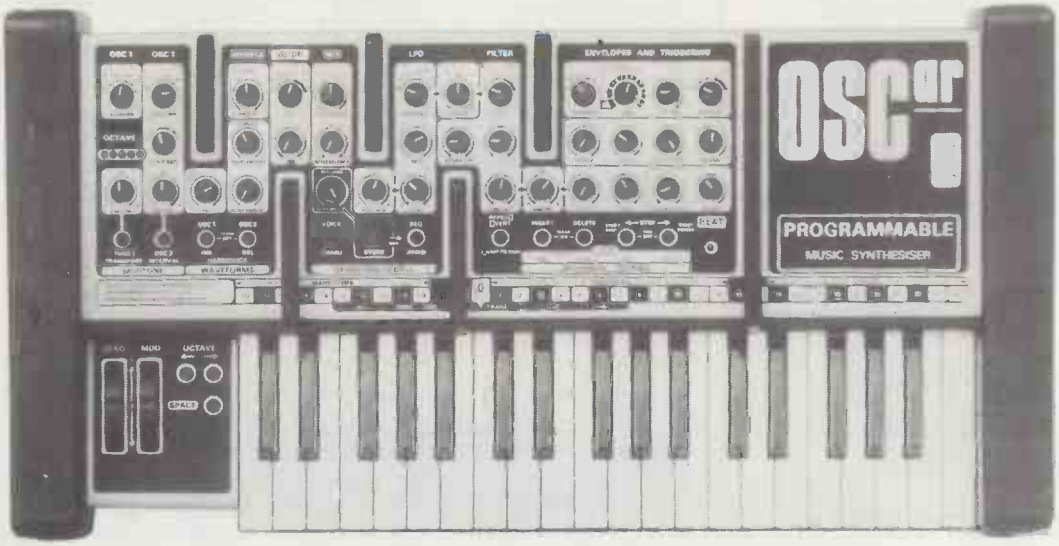

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the sample quality is low. Fortunately, this isn't the case with the Microvox – though if you know your spec sheets, a maximum sample rate of 42kHz (giving 20kHz bandwidth) and companding that effectively gives 10-bit resolution should lead you to expect something reasonable.

There are eight preset sample rates in all, giving bandwidths ranging from the above-mentioned 20kHz to a mere 1kHz. Sample duration varies from just under a second with maximum bandwidth, to just under 20 seconds for the minimum (always assuming you're using the total sample memory). Sounds appear quite acceptable at less than the maximum bandwidth, while speech is acceptable at 5kHz, giving you something like 3.5 seconds of sampling time.

A low-pass filter is fitted to help avoid aliasing, and this is automatically adjusted when you select a different sampling rate. Supersoft have thoughtfully included user-selectable offsets to the filter cutoff frequency at both the sampling and playback stages, giving you a valuable extra degree of control over the sample, including the ability to brighten or darken the timbre of a sound.

The 1.2 program disk also contains a few sound samples of its own, including some weighty percussion voices that range from the orthodox (bass drum, snare, claps) to the unusual (beer bottle, metal box and tupperware), together with such delights as 'popping note', 'aaagh note' and 'chopped guitar', which offer an effective – and amusing – introduction to the sampler's capabilities. There's also a rhythm sequence which shows off the percussion sounds to good advantage. Supersoft could usefully follow the likes of Ensoniq, Sequential and Akai in offering a library of different sample disks – a move they're considering as I write this.

The sampling unit itself looks like something from the wireless age – full marks for aesthetics, chaps. In addition to the essential audio in and out, it houses four rotary controls governing input gain, repeat amount (for the DDL), mix amount (governing the output mix of incoming signal and Microvox-generated sample) and output volume. Single MIDI In and Out sockets are to be found on the back of the unit; the In allows you to play the Microvox's samples from a MIDI keyboard, sequencer or drum machine, but the Out doesn't do anything as yet – though the manual says enigmatically 'future software packages will make use of the MIDI Out socket'. We can but wait.

On power-up you're presented with a menu offering nine pages (eight on the Pro version). Each page lists its own options, and you step through and alter these using the 64's Function keys or a joystick.

Sampling *"You can store as many as 16 samples in memory, and assign individual samples to any notes over the maximum four-octave playback range."*

The Sampling page displays threshold and peak level meters, together with the eight sample bandwidths and their associated durations. Threshold level is user-selectable from the software, while the strength of the incoming signal is adjusted from the sampling unit. The sample – or work – area is defined as whatever sample memory isn't occupied by the other 15 samples.

Once you've selected your sample rate/bandwidth and filter offset (if required), and decided whether or not to use companding (it's advisable), you're ready to sample. The screen blanks while you're sampling (and, incidentally, whenever you're playing back samples). For the more technically-minded, this is necessary if the 64's video circuitry isn't to steal cycles from the main processor and compromise the sampling process.

Once you've taken a sample, you can select a Listen option which allows you to hear your sample played back at the recorded pitch. This provides virtually instant – and invaluable – feedback. Almost as quickly, you can go to the MIDI or QWERTY playback pages, whence your sample can be played back over its full range. If you've previously selected (on the Keyboard Assigner page) which samples are to be triggered by which pitches, you can hear your sample in conjunction with any other currently assigned sounds.

The Microvox can do much more than just play back samples, however. Included is a Waveform Editing page which displays the contents of the current work area, and it's here that you can do all sorts of weird and wonderful things to your samples.

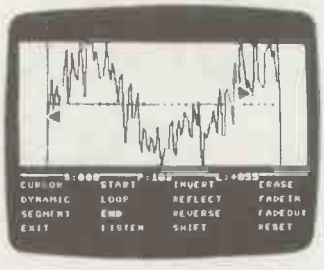
There are two types of display available: Dynamic and Segment. A segment is a block of 128 samples, and while the Segment display allows you to step through (surprise, surprise) individual segments, the Dynamic version 'summarises' each segment and displays the whole sample at once, allowing you to take in the overall envelope of the sample.

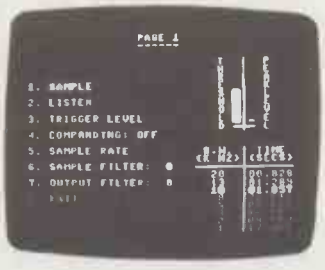
This is about as fancy as the Editor gets. Operations you can perform on the sample are limited to manipulating the sample data as it stands, rather than extrapolating from that data (*à la* Fast Fourier Transforms) for the purpose of manipulating individual harmonics (*à la* the Fairlight). In a sense, the Microvox options are closer to traditional tape manipulation techniques.

Scanning through the sample is achieved by moving a cross-hair cursor across the display. You can set colour-coded Start, Loop and End flags (clearly visible, these) that define which portion of the sample is to be played and, if you wish, looped. The Pro version's auto-looping facility searches out an ideal loop point for you. It's not a quick process, and can take several goes, but you can at least sit back and watch the loop and end flags move through the waveform display in their quest for the perfect loop. The effectiveness of this depends on the sample itself (not all samples lend themselves to glitch-free loops), but the manual honestly states that not every step has been taken in software to ensure the perfect loop. That said, I was able to achieve some pretty reasonable loops, and this option is certainly an improvement on the trial-by-error tactics required by the 1.2 version.

As the portion of waveform between the start and end flags is equivalent to sample A, you can chop a single sound up into several different samples – useful in some cases. And by moving the start and end flags around, you can reverse, reposition, invert, reflect, erase, fade in or fade out the whole or any part of your sample. As with the sampling page, you can immediately listen to the result of your endeavours at recorded pitch, or go to the MIDI or QWERTY playback pages for the full range.

The Voice Handler page is where you get to assign your samples to any of voices A-P (a





voice here meaning a sample). In order to avoid overwriting a sample, you have to transfer it to one of voices B-P, and conversely, to work on a sample in the Waveform Editor page you have to transfer it to voice A. The Voice Handler page also allows you to listen to individual samples, delete and rename samples, save to disk individual samples or all the samples currently in memory, and – particularly useful, this one – merge together any number of samples. Merging is a clever way of layering sampled sounds, but more than that, it has the advantage of freeing memory for further samples. If you decide you've made a dreadful mistake, you can always use the Invert facility of the Waveform Editor to remove an offending sample.

Sequencing *"The 1.2 version's internal recorder is a must for anyone not possessing such a device – yet could also form an adjunct to an external sequencer or drum machine."*

Loading of samples, songs and patterns is accomplished on the Disk Handler page. On entering this page, your current disk is automatically catalogued on screen. Samples and patterns can be loaded individually or as a group, depending on how they were saved; if they were saved individually, they can be loaded into any position. The complete sample memory takes just over 90 seconds to transfer between disk and computer – just about enough time to make the proverbial cup of tea. Samples already in memory aren't overwritten by this. Instead, the Microvox informs you if there's not enough room left to house an entire new file.

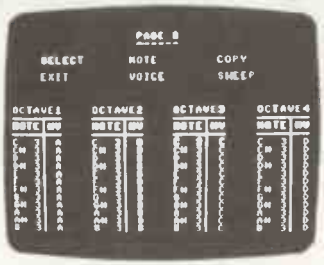
While Microvox samples can obviously be played from a MIDI recorder, the 1.2 version's internal sequencer is a must for anyone not possessing such a machine. Yet it could also form a valuable adjunct to a MIDI sequencer or drum machine, and Supersoft have included internal, external and MIDI sync options, the latter allowing the internal sequencer to be slaved to a MIDI device. There's just one problem with MIDI syncing: if you send a MIDI Stop code from a sequencer or drum machine while a sample is playing back, the sample continues to play for its full duration. This isn't going to bother anybody using cymbal samples, which sound better if left to decay naturally, but it'll doubtless bug users playing back samples of longer duration, which carry on regardless of the rest of the MIDI machinery.

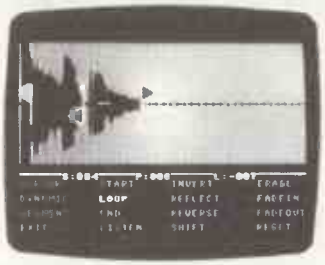
The Internal option doesn't, at present, drive anything but the 1.2's own sequencer, while for External syncing, the manual makes vague reference to the use of a sync box and the 64's user port, and refers to an Appendix which didn't exist in my copy.

Supersoft have included a clock-dividing facility for syncing to the standard clock rates, so non-MIDI syncing is a serious proposition.

The internal sequencer adopts a pattern/song approach familiar to anyone who's ever used a programmable drum machine. Recording can be in real or step time, with real-time recording being from either a MIDI instrument or the 64's QWERTY keys. In real time, the screen blanks out and you get a metronome click from the 64's SID chip; the pattern loops during recording until you stop it.

You can input up to 24 patterns, and then chain these together into a single song with a maximum 170 links. Each link can be given a repeat setting of up to 255 repeats(!), and can be transposed up or down two octaves in semitone steps – handy for adding variety to existing patterns. Each pattern can be given an eight-character name, which is helpful, too. Tempo setting is global.





Patterns are confined to a 4/4 time signature, which is in turn divided into 96 steps (corresponding to MIDI's 24 clocks per crotchet). These are represented as a grid which can be scrolled across the screen when recording or editing in step-time, with the selected step being highlighted. For each step you can enter sample (A-P), pitch, whether the sample is to be reversed or not, and whether the step is a note on or a note off. The latter facility allows you to cut samples down to the duration you want, and is a very useful inclusion. Individual patterns or complete songs can be saved to disk, and editing facilities allow you to insert and delete steps in both patterns and songs.

If there's one area where the generally user-friendly software falls down, it's in numbering the 96 steps; it gets to be a bit of a headache when you're working in step time, and trying to relate the numbers to more familiar and meaningful notation. I'd like to see Supersoft dividing up those 96 steps graphically in a way that makes more sense to musicians, as opposed to adding machines.

One word of warning: before using the sequencer, you need to ensure that all your sounds are edited first. Why? Because the sequencer and the waveform editor use the same area of the 64's memory, and thus can't be used side by side.

The Special Effects page on version 1.2 consists of a digital delay. Duration and delay time depend on the amount of free memory and the selected bandwidth, while repeat amount is controlled from the sampler unit. The Pro version adds a harmoniser (+/– an octave in semitone steps) and chorusing, phasing and flanging effects; the latter three are achieved with appropriate settings of modulation waveform, speed and depth parameters and repeat rate, and some example settings are provided in the manual. This page is intended to act on any incoming audio signal, not on the samples themselves, and there's no doubt it's useful if you don't own equivalent effects units.

All in all, the Microvox is a fine budget-level entry into the world of sampling for a broad range of people. It's best suited to recording and sequencing applications, with its pattern-based sequencer making it especially useful as a sampling drum box; those wanting a performance-oriented sampling instrument will probably still need to look upmarket.

The Microvox is capable not just of recording high-quality samples, but of serving as a flexible musical tool with the help of multi-sampling, sound editing and sequencing facilities, and a healthy degree of MIDI control. It's an extremely attractive package, and, rare among home computer-based systems, it features user-friendly software design and an accessible manual to complete the picture. ■

DATAFILE

Supersoft Microvox Sampler

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Signal-to-noise ratio *70dB (companding off); 88dB (companding on)*
Prices *1.2 version £229.95; Pro version (including 1.2) £299.95, both including VAT*
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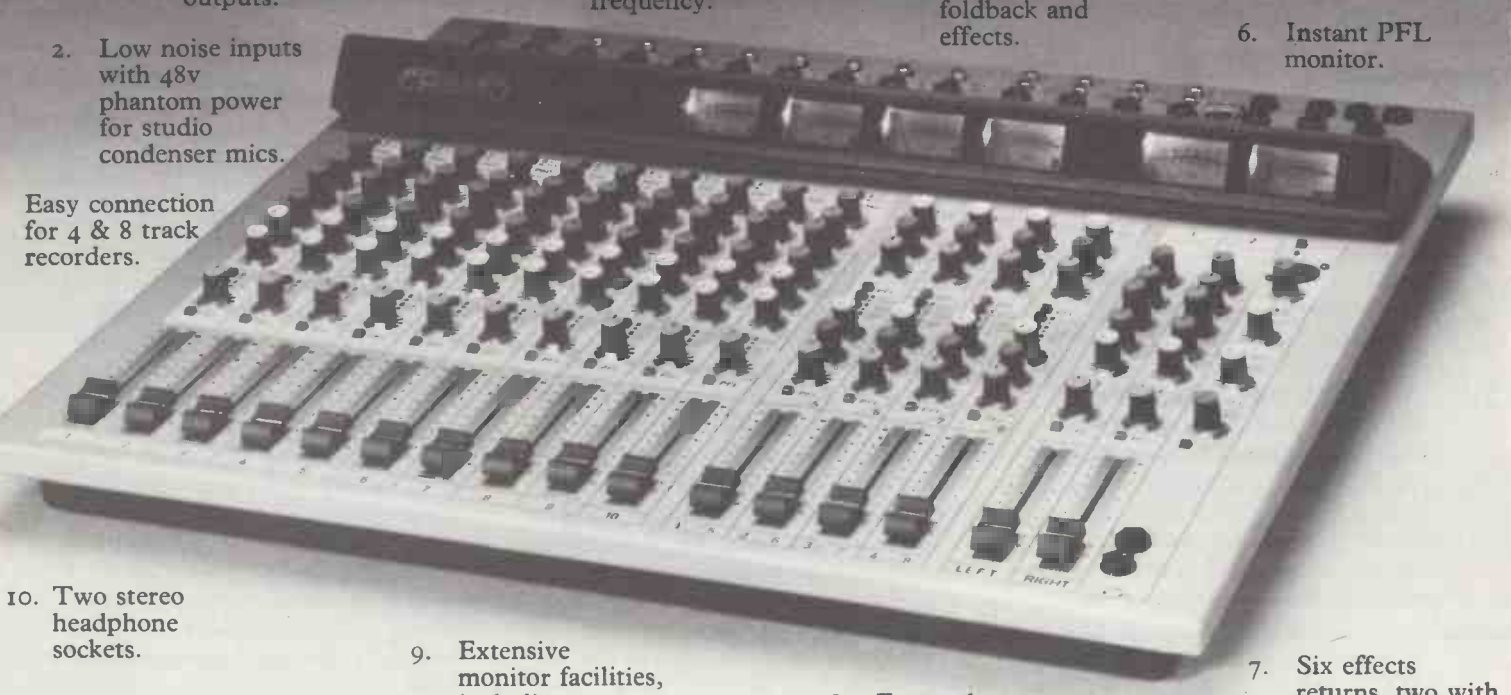

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ZLATNA

A MUSIC TECHNOLOGY PHENOMENON

In the aftermath of February's musical instrument exhibitions, we report on some revolutionary machines that most show visitors didn't even stop to look at. They could change the face of music-making as we know it. ***Dan Goldstein & Paul White***

It's exactly a year since we first told E&MM readers of hi-tech music developments behind the Iron Curtain – more specifically, at the Zlatna Panega laboratories in Plovdiv, Bulgaria. As you may recall, Zlatna's first machine was the ACS100, a revolutionary sound synthesis machine based on the newly-harnessed principle of anticipation control. The ACS was the first (and so far only) musical instrument capable of making up sounds before users even think they need them, and as such, has been a runaway success all over the Eastern Bloc. UK imports of the machine have been limited, as the British importers, Carcass Music, have been going through some chronic cashflow difficulties.

However, it now seems that general UK distribution of the ACS (and its thought-controllable add-on, the TCS100, which can make music simply by tapping the thought patterns of the player using it) is due to start at the beginning of April this year, which is good news.

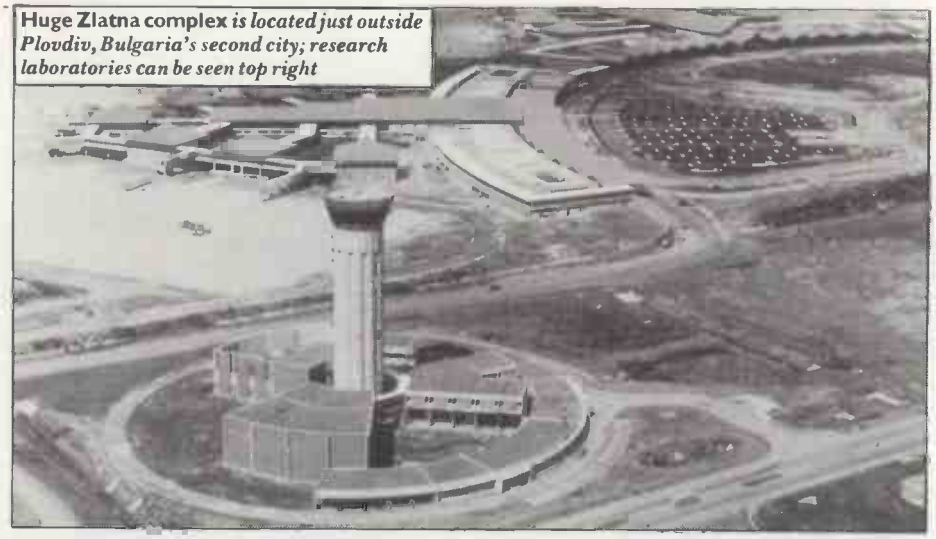
Even better news comes in the form of an extended press release from the Zlatna plant in Plovdiv, received by E&MM just 48 hours before this issue went to the printers. The release details two new innovations (first seen at Frankfurt in February) currently being worked on by the keenest team of electronics R&D people in the Balkans, and confirms our suspicions that the ACS100 is but the tip of an astounding technological iceberg.

It's significant that, whereas MIDI was fitted as an afterthought to the first Zlatna instruments, the Bulgarians are now entering into the MIDI spirit of things with great enthusiasm. Initial fears that the interface was too crude to be compatible with Zlatna's very advanced technology have been allayed, and all the organisation's most recent developments are based around MIDI and what can be done with it.

The first machine being pioneered by Zlatna's engineers is the **NeuroFeedback MIDIplay Sequencer**. Its aim is to help complete novices perform music with the same levels of accuracy and inspiration shown by great virtuoso players.

As painful experience will no doubt have taught many of you, learning to play a musical instrument is an uphill struggle at the best of times. Not only do you have to tell your brain what to do, but your body has to acclimatise to the new physical tasks required of it. For example, a competent piano player has to stretch the fingers of one hand across a keyboard octave without strain, which involves many hours of painful exercise.

Zlatna to the rescue, in the shape of a new machine – the MIDIplay Sequencer – that harnesses the principle of motivating human muscles by the application of minute electric currents. The device is a spin-off from work done at the Gabrovo Institute of Creative Microsurgery, and is primarily the work of one man, Professor Igor Mamarian, whose once promising career in medical science came to a premature end when he was caught smuggling the arms from research corpses home for his pet Doberman. Unceremoniously transferred to the Plovdiv Balkan Noseflute Factory (an annexe of the main musical instrument research institute), Dr Mamarian quickly rose to become Head of Research & Development, a post from which he steered a course far different to that of his predecessors. He conjectured that musical information stored in a MIDI sequencer could be further processed using a fast but basic computer, to provide the minute control voltages necessary to motivate human muscles.



Huge Zlatna complex *is located just outside Plovdiv, Bulgaria's second city; research laboratories can be seen top right*

The outcome of this theorising is a machine capable of actually controlling a musician's muscles, so that even a player of little or no skill can play a relatively complex piece of music – provided it's been digitally encoded in some form. In practice, this has been achieved by offering a range of software packages containing digitally encoded versions of popular pieces of music, all originally played by virtuoso musicians, and with instrumentation options for piano, guitar and Balkan noseflute.

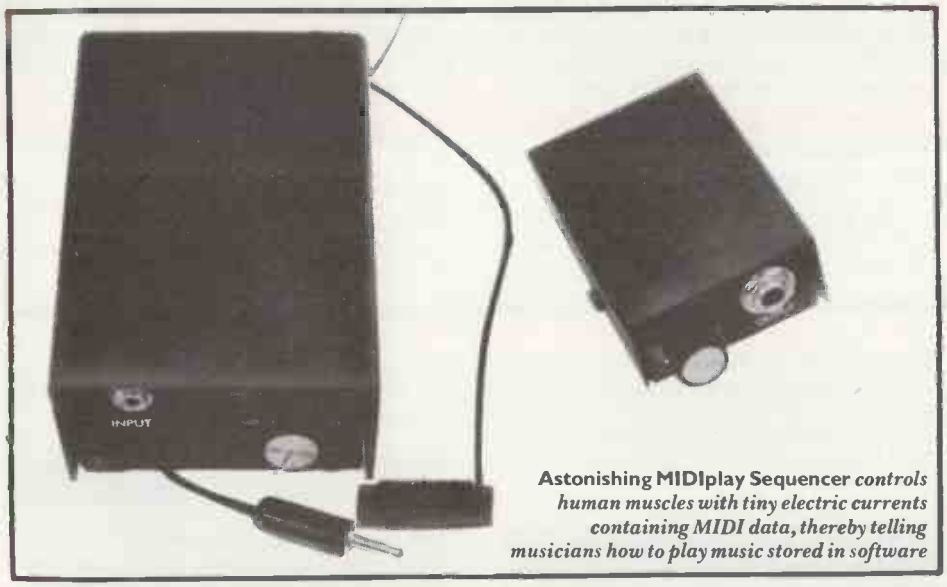
Physically, the workings of the Zlatna unit are as follows. Two velcro armbands (similar to those used in blood pressure tests) contain the skin electrodes, and one of these must be fitted to each of the player's arms, between elbow and wrist. A lightweight multicore cable plugs into the main Zlatna module, into which the appropriate software disk is inserted. Once the Start button is pressed, the neural information is delayed for five seconds, to give the player a chance to put his fingers on the keyboard, or pick up his guitar.

From this point on, the player's arms are under the control of the MIDIplay Sequencer, though it's possible to override the machine's instructions by using a conscious exertion of willpower. This safety feature is essential, as otherwise, players could do themselves serious physical harm by trying to play the piano after inserting a noseflute software package by mistake.

Inexperienced players should use the Zlatna process in small doses at first, as over-exposure can cause muscular strain. To this end, self-limiting software packages for beginners will be available. Also on the horizon are additional 'performance' disks, containing System Exclusive information relating to the playing technique of the virtuoso player concerned. Thus an average musician could play the same piece of piano music in the styles of Vladimir Ashkenazy, Oscar Peterson or Elton John.

As for the music itself, far too much of the current catalogue is devoted to Balkan folk music. At the time of writing, disks for only four familiar pieces were listed: Rachmaninov's Piano Concerto No 1, Kraftwerk's 'Autobahn', 'Angel Face' by the Glitter Band, and Sigue Sigue Sputnik's recent smash, 'Love Missile F1-11'. While this situation is understandable, we can't help thinking the Sequen-

cer's chances of achieving mass market penetration will be hindered so long as the library of Western standards remains small.



Astonishing MIDIplay Sequencer *controls human muscles with tiny electric currents containing MIDI data, thereby telling musicians how to play music stored in software*

Also in the pipeline is a visual music display system which enables music sight-reading ability to be acquired subliminally by correlating an illuminated manuscript display, with the music being transmitted to the neurophysical link. The dots will never be the same again...

Second on Zlatna's list of Things To Do is the astonishing **Multitrack MIDI Multiplexer**. Like the MIDIplay Sequencer, the Multiplexer is loosely based on existing MIDI data recording technology, but any resemblance between this machine and traditional digital multitrack sequencers is entirely coincidental.

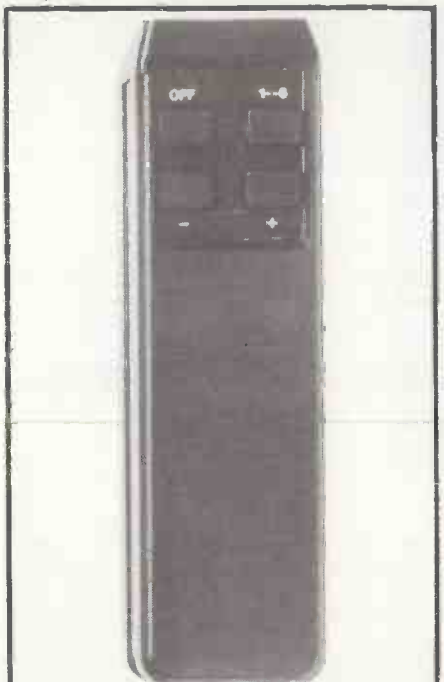
The Multiplexer has been developed as the ultimate in easy-play, auto-accompaniment systems, the playalong music companion to cap them all. It's the work of Romanian MIDI software writer Mikhail Beecherescu, who regular readers will remember as being responsible for fitting MIDI to the original ACS100. Aside from the interface, Beecherescu's main fascination lies with auto-accompaniment facilities such as those fitted to home organs and contemporary portable keyboards.

It was during his time as Romania's Bontempi importer that Beecherescu became aware of a public desire for an auto-accompaniment section that went beyond the mundane, pre-programmed drum patterns and arpeggiated basslines of the keyboards he was selling. When his pleas received little or no positive response from the Italians, Beecherescu decided to design a system of his own. The system, he opined, had to fulfil two basic criteria: it should offer home keyboard users a wider variety of backing patterns, without lumbering them with the burden of having to write those patterns themselves.

Several months of nurturing later, Beecherescu unveiled his QuasiCompositional Musical Data Extrapolation System (now shortened to the convenient acronym QCMDES). The first device to use the system was the MIDI Multiplexer, presented a few weeks after Beecherescu's initial research programme to a committee of Zlatna bigwigs, who grudgingly gave him the production go-ahead.

The machine as it stands now is a complex microprocessor-controlled device capable of extrapolating up to seven individual channels of music from one simple melody, and playing back all eight tracks simultaneously over a user-variable selection of MIDI instruments and voices.

All you do to get the Multiplexer going is hook it up to a MIDI keyboard the way you would any other sequencer, and enter a simple (say, 10-note) leadline, ensuring that the notes are exactly as they should be and that you've played them in the correct style. Once your music has been converted into digital information and received by the Multiplexer, the machine begins analysing the data in terms of pitch, rhythm, structure, mood and performing style – in other words, all the musical parameters from which the rest of the piece is to be extrapolated.



New MIDI Multiplexer *may look like a boring black box to you, but is in fact an auto-accompaniment section to beat them all, and can extrapolate entire pieces of music from one 10-note melody, transferring data to any MIDI instrument*

Of course, no multiplexing machine, however powerful, is capable of responding sympathetically to a piece of music if it has no reference point as to the type of extrapolation required by the user. To help solve this problem, Beecherescu and his team of scientists have developed a revolutionary new system of music data storage (the Ultra High Speed Musical Parameter Memoriser, or UHSMPM for short) whereby musical information pertaining to the above parameters is contained within ROM cards, with each card relating to a particular genre of music. The Multiplexer ROMs vary in capacity depending on the musical style they're intended for. The smallest is the 16-byte Status Quo ROM, which contains all the musical permutations used by the band in their 20-year history, while the largest – still under development – is the 512Terrabyte Brian Eno ROM, which will contain, in addition to his complete musical output to date, a sub-memory annexe housing a variety of extra-mural details such as those contained within Eno's song lyrics, illustrative sketches, notebook entries and interview quotes. The reason for the delay in getting the Eno ROM into production is that a further storage system (the Peripheral Artistic Information Storage and Retrieval Network, or PAISRN) has had to be developed so that the Multiplexer is capable of responding to non-musical artistic details. Some may doubt the usefulness of this facility, but Beecherescu reasons – quite rightly – that "if electro-musicians are capable of being influenced by extra-curricular minutiae, then any system intended for automatic musical extrapolation should be, too".

A number of successful musicians and producers – fed up with the arduous task of actually having to create new music every now and again – have already expressed interest in the Zlatna Multiplexer, among them Trevor Horn, Paul Weller, Philip Glass and Shakin' Stevens.

Yet even with two revolutionary machines like the MIDIplay Sequencer and the MIDI Multiplexer already entering production, there's no sign that the Bulgarians are finished with pushing music technology beyond currently accepted limits.

Our sources indicate that many other new machines are presently undergoing initial research programmes inside the Zlatna complex.

These include the **Polytrack**, a tape expansion device capable of time-division multiplexing 24 tracks of signal onto a single audio tape track, thus enabling users to convert a domestic two-track tape recorder into the equivalent of a 48-track machine; the **MultiVoice Processor**, a huge cross-breed between vocoder, harmoniser, digital delay, sampler, pitch transposer, reverb and chorus unit, which could theoretically be capable of making any singing voice sound like Nana Maskouri (or indeed anyone else) using a complex network of signal processing and resynthesis circuitry, controlled by a human voice; and the **MIDI Song Analyser**, a sophisticated music data development system originally devised for musicians and producers anxious to know the chances of their latest song being an international chart success – though with more software being written all the time, this will be but one of the Analyser's possible functions. ■

Checklist

Checklist returns to dedicated sequencers, software packages, and computer music systems this month.

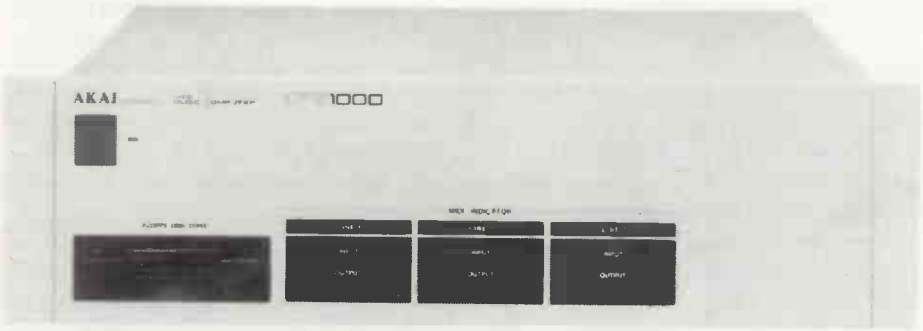
As usual, this is the area that's the most difficult of the three to compile, especially on the software side of things, where product lists, specifications, and prices are subject to constant fluctuation. Please bear with us if you find something in the High Street music store isn't quite as described in the list that follows. And if you discover something that isn't listed here at all, drop us a line. Getting information out of manufacturers can be a pretty thankless task at times...

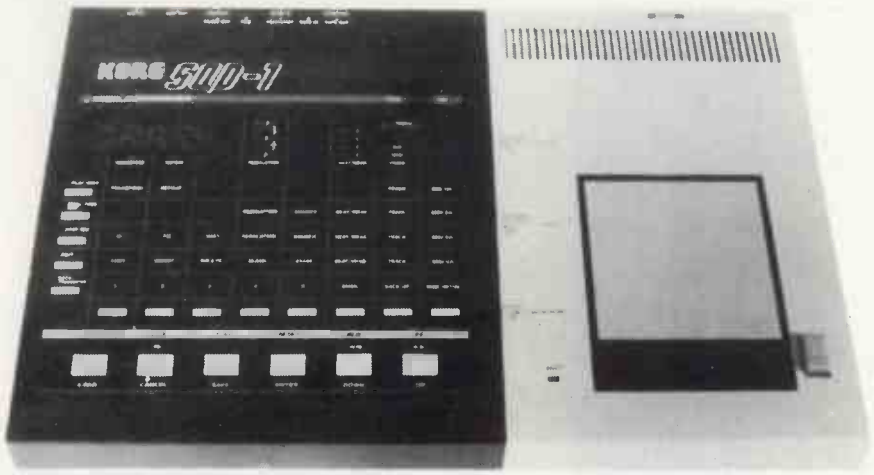
The biggest area of doubt surrounds the UK availability of MIDI software written for upmarket computers like the IBM PC, the Apple Macintosh, and now, the Atari ST. Much of this software is American in origin but, while it's undoubtedly of great musical and technological interest, there's still a great deal of confusion surrounding which packages are sold where, by whom and for how much. As soon as we've collated enough concrete information, we'll detail the systems that are available this side of the pond.

SEQUENCERS

AKAI

CPZ1000 MIDI Recorder/Controller – £1699 Sixteen-track real- and step-time sequencer, built-in disk drive, works in conjunction with RZ1000 keyboard unit and MZ1000 monitor. *To be reviewed.*





CASIO

SZ1 – £299 Four-track digital MIDI sequencer, step- and real-time recording options; storage capacity 3600 notes (step time), 1800 notes (real time); switchable touch data response, cassette and cartridge storage, MIDI-only synchronisation. + *Cheapest dedicated MIDI recorder yet, and without too many sacrifices, two MIDI Outs, easy to use;* − *doesn't store pitchbend data, available memory could be restricting, cartridges aren't cheap;* = *inherent limitations are tolerable given machine's big price advantage over everything else, thus good value, two SZ1s MIDI'd together would make a neat eight-track sequencing system for not much outlay.*

KORG

SQD1 – £599 Two-track MIDI recorder, step- and real-time recording options; 15,000-note storage capacity; MIDI In, 2 MIDI Outs, Sync 48 (Korg standard) and tape sync facilities, quick-disk storage. + *Logical layout gives excellent ergonomics, hence machine is one of easiest to use, disk storage is quicker, more convenient, more reliable than just about anything else;* − *non-variable clock rate obliges you to buy adaptor unit if your system's not a MIDI one, two-track format could prove limiting;* = *viable and presentable alternative to previously-available machines, with more than the odd bit of design inspiration to help it on its way, shares QX21's 16-channel MIDI assignment system, which is good.*

OBERHEIM

DSX – £1195 Sixteen-channel (eight CV/Gate outs) digital sequencer; 6000-note, ten-sequence, ten polyphonic track capacity; patch change, split and double control parameter information; cassette storage, internal or external sync options. + *Part of comprehensive Oberheim system comprising excellent DMX/DX digital drum machines and OB8 poly, does its job smoothly and efficiently;* − *not MIDI-compatible, but see below;* = *obvious choice for Oberheim system owners that's been subject of recent price reduction, now has limited MIDI capability thanks to US company J L Cooper's Oberface – if you can find it.*

ROLAND

MC202 – £160 Two-channel digital CV/Gate monophonic sequencer; real or step-time recording options, approx 2600 note capacity; tape storage, portamento and accent facilities, internal or external (24ppqn) sync options, battery or transformer operation. + *Built-in sound-generating synth module, second sequence channel, very low price;* − *no MIDI facilities, synth section sounds nothing special and incorporates no patch memories;* = *excellent introduction to sequencing sadly approaching the end of its useful working life, but still difficult to ignore if money is tight.*

MSQ100 – £399 Single-track, 6100-event polyphonic sequencer; step- and real-time recording options, velocity parameter information, cassette storage, internal or external sync (24ppqn) option. + *16 channels of MIDI recording, cost, power-down memory retention;* − *multifunction controls make many options difficult to access, no overdub editing facilities;* = *versatile, cost-effective machine outperformed by Yamaha QX21, but probably a better bet for existing Roland sequence users.*

MSQ700 – £799 Eight-track digital MIDI and DCB sequencer; real- or step-time recording options, 6500-event capacity, voice, envelope and filter parameter information; tape storage, MIDI In and Out. + *Ease of operation, DCB connection means JP8 and Juno 6/60 owners can use their synths in MIDI systems;* − *no MIDI Thru and only one MIDI Out, high cost for what's inside the*

machine; ➖ a deservedly and consistently good seller, but position of prominence now under threat from recent rivals and arrivals.
MC500 – £799 Digital multitrack recorder and microcomposer, available early summer. *To be reviewed.*

YAMAHA

QX1 – £1999 Eight-track digital MIDI sequencer, real-time recording with extensive step-time editing facilities, 32 songs, 999 measures, pitchbend, modulation, key velocity, aftertouch control parameter information; approx 80,000 note capacity, disk storage, MIDI In, Thru, eight MIDI Outs. ➕ *Unrivalled (for a dedicated machine) editing and MIDI track assignment options, tailor-made for Yamaha's own superlative TX816 sound rack; ➖ inadequate display, silly keyboard, costs a lot for a jazzed-up eight-bit micro; ➖ has spent a year at the top of the dedicated sequencer tree and deservedly so – contemporary technology's version of the MicroComposer, but polyphonic and a lot more flexible.*
QX21 – £249 Two-track digital MIDI sequencer, step or real time recording options; key velocity, aftertouch, pitchbend, modulation, foot control, breath control parameter information; cassette storage, internal and external MIDI syncing options, MIDI In, Out, Thru. ➕ *Ease of use (considering multiplicity of job commands and functions), track assignment flexibility, cost; ➖ only one MIDI Out; ➖ well thought-out, revamped QX7 that offers versatility of computer software in a more musically-accessible package, 16-channel MIDI recording affords more potential than two-track format would indicate, a real bargain at some £200 less than its predecessor.*

SOFTWARE

EMR

BBC MIDI Hardware Interface – £90 MIDI In, two MIDI Outs, sync (24 ppqn) connections.
MIDItrack Composer – £50 Disk-based, step-time sequencing package for BBC B. ➕ *Reasonably comprehensive range of editing facilities; ➖ like a lot of early step-time packages, too laborious to make using it enjoyable or even tolerable; ➖ designed for computer buffs rather than musicians, if you're one of the latter, you'll be disappointed.*
Performer – £80 Eight-track, disk-based, real-time sequencing package for BBC B; **Graphics – £37** Graphics-generation package for BBC B, responds to input of MIDI music information; **Notator – £40** Forthcoming disk-based link package for Composer, permits hard copy of music; **BBC Editor – £40** Forthcoming disk-based link program for Composer and Performer, allowing both real-time and step-time input. *All above EMR BBC packages to be reviewed.*
CBM64 Hardware MIDI Interface – £90 MIDI In, two MIDI Outs, sync (24 ppqn) connectors.
Performer – £80 Eight-track, disk-based, real-time sequencing package for Commodore 64. *To be reviewed.*
Spectrum MIDI Interface – £90 MIDI In, two MIDI Outs, sync (24 ppqn) connectors.
MIDItrack Performer – £80 Eight-track, cassette-based, real-time sequencing package for Spectrum. ➕ *Easy to use, above average use of Spectrum's limited graphics capabilities; ➖ still a few editing idiosyncracies, won't work with any hardware other than EMR's own interface; ➖ a definite and welcome improvement on EMR's earlier BBC package, let's hope they keep it up.*

FIREBIRD

Island Logic 'The Music System' – £40 Real-and step-time MIDI sequencer for Commodore 64, available on disk only, compatible with SIEL and Passport MIDI interfaces. ➕ *'16-bit' graphics on an eight-bit machine, complete with icons and pull-down menus, excellent cut-and-paste facilities on music display within step-time section; ➖ long loading times between sections, system obviously designed for SID chip and adapted for MIDI later, thus MIDI facilities limited; ➖ beautifully structured, reasonably priced sequencing package, and a glimpse into the future of MIDI software design.*

HINTON

MIDIC 1.1 – £300 (10K), £350 (10K with battery backup) Intelligent interface between MIDI and RS232 computer-standard connection. Includes utility program that allows incoming MIDI data to be viewed on-screen to assist users wishing to write their own MIDI software. ➕ *Excellent idea put into practice with competence by company with limited resources, system is essentially open-ended; ➖ current software lacks non-MIDI facilities, R&D costs passed on in high-ish selling price; ➖ one of the best thought-out MIDI packages to appear since the system's inception, though its eventual success will depend on the software-writing skill of others. Also available: interfaces for Yamaha REV1 and AMS 15-80S, both £400.* ►

JELLINGHAUS

Commodore 64 MIDI Hardware Interface – £90 MIDI In, MIDI Thru, three MIDI Outs, external Clock In; made for Jellinghaus Music Systems by SIEL in Italy.

12-track Recording Studio – £100 12-track, 7677 event, disk-based real-time sequencer for CBM64; velocity, pitchbend, aftertouch and program change parameter information, internal or external sync options. + *Potentially easy to use, plenty of channel assignment options;* − *terrible manual hinders rapid acclimatisation, both hardware and software have their idiosyncracies;* = *flexible system from a company that knows what it's doing in the programming department, even if the hardware sometimes lags behind a little.*

Sequence Chain Program – £45 Add-on for 12-track Recording Studio, acts as link between sequences of various tempi and time signatures, allows storage of patch changes. *To be reviewed.*

SixTrak Sound Editor – £50 Commodore-based patch-editing program for Sequential SixTrak and MAX polys. *To be reviewed.*

Scorewriter – £340 Combination program produces hardcopy screen dump of music notation display from sequencing software; price includes 12-track Studio and Sequence Chain programs stored on EPROM.

JORETH

Music Composer System – £250 Eight-track, disk-based, real-time and step-time sequencer for CBM64, sold with hardware interface or as separate item; 6000-note capacity, MIDI In, three MIDI Outs, internal or external sync options. + *Excellent low-level Music Composition Language, syncable to non-MIDI clock (selectable timebase), easy to use considering complexity;* − *relatively high asking price;* = *one of the premier MIDI software package for CBM64 users, so far produced in small numbers by Worcestershire company particularly responsive to musician's – rather than programmer's – requirements and suggestions.*

CZ Editor – £45 Sound editing package for Casio CZ synths, Commodore 64 computer and suitable interface. + *Useful patch reorganisation and storage facilities, can be used with Joreth sequencer without reloading, neat details like level/rate attenuation and copy/exchange of envelopes;* − *uninspired screen displays, unhelpful manual don't improve ease of use;* = *offers a huge improvement over facilities provided onboard CZ synths, but it could be made better still.*

LEMI

Apple MIDI Card – £TBA MIDI In, three MIDI Outs, external Clock In, footswitch jack, for use with Apple home computer and Apple-compatible lookalikes.

Future Shock Software – £TBA Disk-based eight-channel, real-time sequencer package, 2900-note capacity. + *Easy to use thanks to single-keystroke commands and handy Help page, decent editing facilities;* − *Apple isn't exactly world's best-value home micro;* = *well thought-out and eminently usable real-time sequencing package.*

AMP 83 Software – £TBA US-originating collection of Apple-based MIDI programs, including step- and real-time sequencer (16 channels, 4000-note capacity), and delay program that introduces time delay between MIDI Receive and Transmit signals.

MIDISOFT

RAP Software – £37.50 Drum sequencing and arranging software for MIDI drum machines and Spectrum or Commodore 64 computers, works with variety of hardware interfaces. + *Ingeniously written package acts as central rhythm programmer for collection of MIDI drum machines, allows transfer of patterns from one machine to another;* − *could have shorter tracks and the ability to store more than one machine configuration at any one time;* = *a brilliant piece of software that costs little, does a lot, and deserves to be in the home of every MIDI drum machine owner.*

PASSPORT DESIGNS

Apple MIDI Card – £220 MIDI In, MIDI Out, Drum Sync In/Out (24, 48 or 96 ppqn), plugs into expansion slots on Apple motherboard.

MIDI/4 Plus Software – £120; MIDI/8 Plus – £180 Disk-based real-time sequencing packages for Apple II and CBM64; four-track, 5500-note capacity (MIDI/4), eight-track, 11,000-note capacity (MIDI/8). + *Extensive over-dubbing facilities now matched by a decent range of editing options, plenty of support from one of computer music's most active companies;* − *still too expensive to be a really major force in the UK marketplace, though they do at least have a distributor now;* = *better than average software at a higher than average price.*

Music Shop Software – £80 Step-time music transcription package for Commodore 64 and Passport MIDI interface. + *Excellent display/printout facilities, ease of use, cheaper than you expect;* − *doesn't really make the most of MIDI, no real-time input;* = *one of the best music transcription packages available for budget micros.*

ROLAND

MPU401 Hardware Interface – £160 'Intelligent' interface for Apple and IBM PC; MIDI In, two MIDI Outs, Sync Out, Tape In/Out connectors; additional computer bus allows four MPUs to be connected in parallel.

MUSE Software – £180 MIDI Users' Sequencer/Editor for Apple IIe and Commodore 64 computers. *To be reviewed.*

MPS Software – £595 Multitrack Music Processing System for IBM PC. *To be reviewed.*

SIEL

Spectrum MIDI Hardware Interface – £79 Spec similar to JMS interface unit.

Spectrum Live Sequencer – £22 Cassette-based, single-track, polyphonic, real-time sequencer for Spectrum; control over tempo, looping facility. + *Simple to use, inexpensive;* − *obvious limitations of single-track format;* = *good starter program for the short term.*

CBM64 MIDI Hardware Interface – £79 Spec similar to JMS interface unit.

CBM64 Live Sequencer – £69 Disk or cassette-based, 16-track polyphonic, real-time sequencer for CBM64; editing and transposition facilities, song memory. + *Remembers velocity and aftertouch data, fairly easy to use, who can argue with 16 recording channels at this money?;* − *needs more editing facilities, laborious playback routine;* = *almost, but not quite, the perfect* player's *software package.*

Expander Editor – £53 CBM64/Spectrum disk- or cassette-based graphic parameter control program for Siel Opera 6, DK600 and Expander 6. + *Excellent graphics program puts 'analogue' visual on computer monitor for rapid, straight-forward patch editing;* − *nothing, except that DK80 Editor has even better graphics;* = *a real winner, shows Siel have programming ingenuity in abundance.*

BBC/CBM64 Multitrack Composer – £39 (disk), £36 (cassette) Six-channel step-time sequencer, 9000 note capacity, QWERTY input of information. + *Highly versatile, masses of editing facilities for very little money;* − *can be a real pig to use;* = *should succeed among composers rather than musicians, but still too many keystrokes per note for our liking.*

MIDI Data Base – £39 CBM/Spectrum disk- or cassette-based synth program file, stores 250 patches for any MIDI synth except Yamaha DXs and Casio CZs. + *Versatile program that lets you house synth patches in related 'families', among many other things;* − *nothing we can think of;* = *well-conceived and user-friendly package that does something really novel with the MIDI standard, and a real bargain.*

Digital Echo/Delay – £54 CBM64 disk- or cassette-based digital delay program, works by inserting delay between MIDI Receive and Transmit signals; 5mS-200mS delay, control of signal/effect balance, 14 'heads', auto-loop, MIDI-assignable file sequence. *To be reviewed.*

Keyboard Tracking Program – £75 CBM64 disk- or cassette-based program facilitates assignation of master keyboard with splits, arpeggiation, sequencing to control any MIDI source. *To be reviewed.*

DK80 Editor – £55 CBM/Spectrum disk- or cassette-based Editor for DK80 polysynth, gives full control over user-adjustable parameters by joystick or QWERTY keyboard, complete with real-time waveform shaping, Help pages. + *Excellent graphics, coupled with user-friendly operation;* − *the fact that similar packages don't exist for a bigger range of synths, sluggish cursor movements, the odd bug or two;* = *makes parameter editing more rewarding, proves new technology can assist sound-changing to good effect.*

DX7 Editor – £TBA Voice Editor and patch memory for Yamaha DX7. *To be reviewed.*

SDS

DX7 Editor – £25 Cassette-based DX7 voice editor program for Sinclair Spectrum, works with most major Spectrum MIDI Interfaces; allows libraries of voices to be built up on cassette. + *Excellent and easy-to-use (if rather derivative) graphics, even more remarkable given humble Spectrum origins;* − *nothing unless Yamaha are planning to sue for graphics plagiarism;* = *another patch-editing winner, all the more useful in the context of DX7's unhelpful LCD window, saves Spectrum owners the cost of CX5M and appropriate software.*

STEINBERG

Pro16 Sequencer – £90 Sixteen-track real- and step-time MIDI sequencer for Commodore 64 and Steinberg interface (£135). + *Easy to use, despite being more flexible than any other home micro-based system, with MIDI channel reallocation, track soloing and pattern-programmable tempo facilities;* − *too easy to start recording in the wrong pattern, foot-pedal control would be useful;* = *the most musician-friendly Commodore-based software package, full of clever details that are as well laid-out as they are useful.*

TNS Scorewriter – £120 Scorewriting package for Commodore 64 and Steinberg interface, files compatible with Pro 16 sequencer. + *Comprehensive screen-based step-time editing and music creation, becomes even more effective when used with sequencer;* – *printout too slow to make extensive score printing a feasible proposition, users have to set ranges for staves;* = *clever, sophisticated package that allows you to alter your music entirely once it's on-screen, is ultimately more valuable as a step-time editor than a score-writer.*

UMI

UMI 2B – £495 British-built all-in-one MIDI sequencing package for BBC B, comprising ROM-based step- and real-time sequencing software with extensive editing and song-chaining facilities, DX7 voice dump. + *Sequencer beautifully easy to use in either entry mode, compaction facilities allow removal of memory-intensive dynamic and mod wheel data, informative and helpful graphics layout;* – *only the cost;* = *superbly conceived and well laid-out sequencer package that's gaining increasing support from the professional fraternity.*

XRI SYSTEMS

Micon MIDI System Controller – £108 Eight-track (mono) real- and step-time sequencer for 48K Spectrum; 10-sequence, 24,000-event capacity; comes complete with hardware interface incorporating MIDI In, two MIDI Outs, internal or external sync options. + *Sync to non-MIDI clock (selectable timebase); excellent step-time editing facilities, very creditable music notation display, open-ended structure offers scope for user-programming;* – *poor real-time facilities;* = *again, British programming cleverness beats inadequacies of host micro to produce a really usable and versatile package, too good to ignore unless real-time editing is top of your list of priorities. Also available: Casio CZ Editing package for Spectrum and interface.*

COMPUTERS

ATARI

520ST Home Computer – £700 68000-based home micro with 512K RAM, mono monitor and disk drive included in price; built-in MIDI In and Out sockets, GEM graphics system, BASIC and logo programming languages. + *Excellent graphics, interfacing, language implementations add up to extremely attractive computer package on which MIDI is even more attractive bonus;* – *internal sound chip is a bit of a let-down, package too pricey for most first-time home computer buyers;* = *all in all, probably the immediate future of non-dedicated computer music systems, with MIDI software starting to become available now.*

E-MU SYSTEMS

Emulator II – £7250 Eight-voice, eight-bit sampling system, five-octave velocity-sensitive keyboard, split and layering facilities, analogue filtering and LFO, disk storage. + *Superlative sound quality, maximum 17-second sample length, onboard sequencer, MIDI compatibility, ease of use in all areas, especially looping;* – *long loading times, poor keyboard;* = *great improvement on original Emulator, and one of the easiest and most cost-effective routes into high-quality sound-sampling.*

FAIRLIGHT

CMI – £28,500 + VAT (basic system) Eight-voice, eight-bit digital synthesis and sampling, built-in dual disk drive, six-octave music and QWERTY keyboards; wide range of sound creation and music production software packages. + *Designed as a total computer music system from the outset, and it shows;* – *comparatively poor sampling quality, soon to be replaced by 16-bit Series III;* = *an industry standard, though showing signs of being left behind by cheaper, newer technology, Series III could change all that.*

CMI Series III – £c60,000 16-bit version of current Fairlight, with new software organisation incorporating CAPS composer/arranger package, built-in MIDI, and other modifications. *To be reviewed – see elsewhere this issue for preview.*

GREENGATE

DS3 – £250 Four-voice, eight-bit, disk-based digital sound-sampler for Apple II/IIe; optional (£200) five-octave keyboard, on-board real-time sequencer. + *Sounds surprisingly good for cost, new looping and editing software improves system's versatility;* – *not very easy to use, poor interfacing;* = *still one of the cheapest ways of getting into polyphonic sampling, if you have an Apple: further, more sophisticated developments still to come.* ▶

studios, musicians and composers with more money than they know what to do with.

PPG

Wave 2.3 & Waveterm B – £5245 & £6760 Eight-voice, 16-bit, additive synthesis and disk-based sampling system; five-octave velocity- and pressure-sensitive keyboard, onboard sequencer software. + *Versatility of analogue/digital hybrid synth system, relatively cost-effective;* − *suspect build consistency;* = *highly versatile and justifiably popular studio system, now with notable better (16-bit) sampling quality and upgradable with Expansion Voice Unit and weighted Processor Keyboard.*

Realizer – £c40,000 Sixteen-bit sound-generating, sequencing and sampling system, with built-in hard disk unit, remote controller and colour monitor; all sounds generated in software. *To be reviewed – see elsewhere this issue for preview.*

YAMAHA

CX5M Music Computer – £299; MSX software cartridges – £39; YK10 full-sized keyboard – £165 32K MSX micro with onboard eight-voice FM digital sound chip of similar spec to that in DX9 poly. + *Excellent sound capability thanks to Yamaha's unbeatable FM system, superb voice editing, composing, and drum editing software packages;* − *silly miniature keyboard supplied, lots of documentation/specification hassles, disk drive horribly expensive;* = *for the time being, the only serious contender in the cheap music micro stakes, now a real bargain thanks to its reduced price: lots more software, alternative FM sound chip now available.* ■

KURZWEIL

250 – £10,995-£18,035 Twelve-voice, disk-based sampling system; 88-note velocity-sensitive weighted keyboard, split facility. + *Excellent sound quality thanks to unique 'Contoured Sound Modelling' system, comprehensive interfacing, onboard sequencer and chorus, 12-channel outputs;* − *user-sampling requires (expensive) addition of Apple Macintosh computer;* = *after all the pre-release hype, the Kurzweil delivers the goods: but elements of its design could be a lot more cost-effective.*

NED

Synclavier – £24,500-£105,000 Eight- to 32-voice, 16-bit FM digital synthesis and sampling system; 76-note, individually pressure-sensitive, weighted keyboard, 32-track onboard sequencer, internal or external sync options, SMPTE syncing facilities. + *Vast range of software updates and options, future ones include fully polyphonic sampling;* − *outrageously expensive, Yamaha's DX exploits have made FM synth section look very silly;* = *an excellent system for*

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YAMAHA SPX-90
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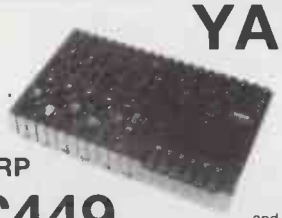
The SPX90 has an exciting range of 30 ROM preset effects, each with as many as 9 controllable parameters to choose from. The built-in RAM memory capability lets you store up to 60 personalized effects with your original title for easy recall. For stunningly close-to-natural vibrance and warmth the programs include full Reverb, Early Reflections and Delay/Echo effects capabilities, and for fine tonal tailoring there is even a digital Parametric Equalization program. Modulation effects like Chorus and Stereo Flange, for example, provide fuller sound. Special effects include Freeze (known as sampling), Pitch Change, Gate Reverb, ADR Noise Gate, and Auto Pan. MIDI compatibility is now standard equipment for the latest effects processors. Thus, the SPX90 will not only accept program changes. Some programs like Freeze and Gate Reverb can also be triggered via MIDI. Another great feature lets you control pitch changes from a MIDI keyboard.

RRP **£599**

YAMAHA MT1X
4 TRACK RECORDER/MIXER



The MT1X combines a four-track cassette recording mechanism with a full-function 4-channel mixer. The mixer section includes tape-mic/line input selectors on each channel, level adjustment for mic and line input, auxiliary send and master return inputs for effects processing, and a separate monitor section with level and pan controls for each track.

RRP **£449**

TX7 FM Tone Generator RRP £699 – Our Price Only **£449**
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QX21 Digital Sequence Recorder – only **£259**

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DX7 OWNERS – ILLUMINATED LCD KIT £50

CASIO RZ-1
DIGITAL SAMPLING RHYTHM COMPOSER

This striking unit boasts 100 pattern memories, 20 song memories, individual outputs and volume controls, and MIDI In, out and thru. Twelve powerful PCM preset sounds are available with programmable accent and mute functions. Auto-compensate allows the user to correct patterns from 1/2 beat per bar to 1/96 per bar – And if that isn't enough, four sample memories are provided, each with a sample time of 200 ms. All four can be chained together to provide one sample memory of 800 ms or paired off to give two sample memories of 400 ms each. Tape dump is provided not only for patterns and song memories, but also for samples and these samples can be input via the rear panel mic/line socket at a sampling rate of 20KHz. A back-lit LCD, together with easy to read front panel graphics complete what is surely the most impressive drum unit to be seen on the market for some time.

RRP **£345**

CZ101 RRP £399 Our Price **£295**
CZ1000 RRP £499 Our Price **£449**

ensoniq Mirage

Using the latest in digital technology, the Mirage lets you play real instrument sounds, either from Ensoniq Sound Library Diskettes or sounds you've created yourself. The Mirage also features 37 playback parameters to give you a wide range of control over the envelopes, filters, modulation, tuning and keyboard effects.
To fully utilize its performance, studio and sampling features, the Mirage offers a full range of MIDI functions, including after touch and breath control from external MIDI controllers.

£1295

ensoniq Mirage EXPANDER

The Mirage digital multi-sampler has all of the performance and sampling features of the Mirage digital sampling keyboard – without the keyboard. It's a complete polyphonic eight voice instrument with a musical range of 5 octaves. Includes a disc formatter, advanced sample guide and sustain pedal.

£995

AKAI S612

MIDI Digital Sampler + Disc Drive
Incredible New Low Price **£895** Complete

ensoniq ESQ-1

The ESQ-1 is an 8-voice polyphonic, polytimbral synth with a rich and full sound that can only be accomplished with 3 oscillators per voice. There is a choice of 32 multi-sampled and synthetic waveforms for a nearly unlimited variety of sounds and effects. Included are sampled waveforms of piano, strings and brass instruments – creating a synth unlike any other in character and realism.

£940

AKAI S900 MIDI DIGITAL SAMPLER

Eight voice polyphonic digital sampler. Using 12 bit linear technology, the S900 comes complete with a 3.5" disc drive fitting into a 19" 3U rack mount. 8 voice polyphonic or 8 individual monophonic voices over 6 octave range.

Our Price **£1599**

The Ensoniq Piano

The Ensoniq Piano . . . to say it sounds grand is only the beginning. It uses multi-sampled grand piano waveforms to produce the first completely accurate piano sound from an electronic instrument.
In addition to grand piano, there are digitally sampled electric piano, marimba, electric bass and upright bass waveforms in the Piano's memory. Acoustic piano variations include bright and mellow timbres, as well as honky tonk piano. There are also bright and mellow electric piano variations, plus two marimba sounds, vibes, percussion and mallet – 12 completely real sounds available at the push of a button.

£940

AKAI CPZ1000 MIDI MUSIC COMPUTER

The following system comprises of three separate units, the CPZ1000 MIDI Recorder and System Controller, the RZ1000 Keyboard unit and the MZ1000 CRT Display unit.
The MIDI Recorder has a capacity of up to 50,000 notes spread over 16 tracks, each track may have 999 bars with a phrase to each track. Three MIDI IN/OUT's are provided allowing three tracks to be recorded in real time simultaneously whilst also monitoring other playback tracks. Single note and chord input is possible in step time mode.
Up to three lines may be output simultaneously with the track to line output being infinitely variable, the playing sequence can be programmed to each track by bar or by phrase and the playback can have any start.

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KING OF TECHNO POP

He's arguably the world's top producer of electronic pop music. Yet he began his career in hippiedom, made his name as a punk producer, and has spent the past year working with non-electronic acts. Now seems a good time to talk to Mike Howlett.

Interview *Paul Tingen* Photography *Matthew Vosburgh*

'Anybody can go into the studio and make very fine records. You don't need a producer for that. A producer is there to make things marketable – that's why a record company or a band gets one in. It's the producers' job to make things work, to use their expertise so that records are playable on the radio. Some bands don't realise that, even when it's so obvious. If all you want for a record is for it to sound good, you can just hire a good engineer.'

The man talking is, not surprisingly, one of Britain's top record producers, and what he says is not to be taken lightly. Over the last decade, Mike Howlett has been responsible for producing a whole load of hit albums and singles, most of which fall into that rare breed of records that are both commercially and artistically successful.

After leaving his post as bassist with Gong in 1976, and after a brief flirtation producing punk bands in the late 70s, Howlett went on to produce various synth-oriented acts like Orchestral Manoeuvres in the Dark and A Flock of Seagulls. And as it turned out, it was for his successful involvement with synth-based music that he became well known. Lately, however, he's moved into more traditional production areas, working on Joan Armatrading's latest album 'Secret Secrets', and the new Alarm long-player, 'Strength', from which 'Spirit of '76' sprang into the singles charts.

Inside Abbey Road's Studio 2, Howlett takes a break from a recording session with young London band The Impossible Dreamers, to talk and to be photographed. Relaxed and self-assured as the producer seemed over the phone, lensman Vosburgh and I are surprised to meet a rather shy man within EMI's hallowed recording halls. A short-ish figure with hair greying at the sides, Howlett clashes his hands together in nervous movements, clearly ill at ease with this sudden exposure to media limelight.

Nonetheless, his speech is keen and vivid. 'I don't think it's an evil thing that records have to sell, because you're dealing with a mass market. I don't care what anybody else says: I don't believe a million people will walk into a shop and put their money on the table to buy a record because they're told that's the thing to do. People buy records because they get something from the music and because that music gets to them. And it usually gets to them via the radio.'

The producer smiles affably whilst pulling his hair. He seems to guess what his interviewer is thinking. Surely, for a man with a well-earned reputation for indulging in the inaccessible and the avant-garde, there must be more to producing than trying to get a single on the radio? The smile broadens.

'Commerciality isn't everything, I agree. I like to make records that are interesting as well, and I have a relatively refined musical taste, I think. When I listen to a demo of a band I consider to produce, I listen for two things: Does this music do something that gets me emotionally, and is there a song there that I can make into a single?

'Music has to give me some kind of feeling, whether it's happiness or sadness. I have to like the feeling of a band in general. If I do, and we come to an agreement about me producing them, then I want to take that feeling and communicate it to a wider audience. I try to make a band heard when their songs sound good to me. And really, there are very few bands nowadays who have broken through to a large audience, without a song that was really catchy.

'You can waste a lot of time and energy on a band, making a fantastic-sounding album which nobody will ever hear or buy because it hasn't got that hit song – though sometimes I might be reckless and do an album just because I think it's great music.

'I like demos: the rougher the better, because then you can get to really hear what's in a song, like a hook or a little line in a chorus that can be made stronger. Sometimes you hear songs that are perfect, but at other times you think: "well, this song has some good parts, but it also has a lot of rubbish, so I'll have to chop out quite a bit".

'When I start working with a band, the first thing we do is discuss our ideas thoroughly. Next I like to spend a lot of time rehearsing, because I like to really go into the arrangements, right down to the drum pattern and the structure of the song.'

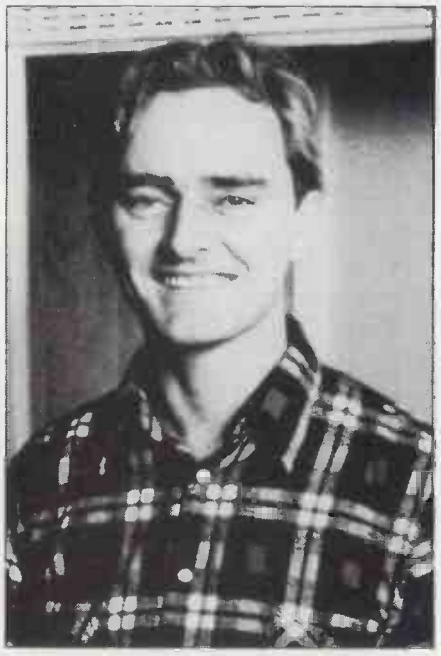
So Mike Howlett's contribution as a producer lies firmly on the side of arrangement, often drastically affecting the shape of a band's music...

'I've actually gone as far as doing a whole synthesiser-sequencer arrangement of a song, and then getting the singer to go out and put his track down and have the guitarist and the other musicians do the same, effectively replacing all the instruments whilst keeping some of the synth and drum computer parts.

'Sometimes I stripe the tape with SMPTE and run the drum machine off that, then I'll go for a drum track with everybody playing. I like to have the whole band playing because a drummer might come up with things he wouldn't ordinarily play. It also feels good for a band. It sets up a good atmosphere because they're all playing there, in the studio, like they'll play on stage. I like that, because once you've got the arrangements sorted out and the band is comfortable with them, you can get ideas to improve the rhythm track.

'Then, after recording the whole thing, I might possibly replace everything – bass, guitar, keyboards – and build it all up again, layer after layer in a very conventional way. I started to do this thing of everybody playing again · I know it's an old way of doing it · because I was missing out on live excitement in the studio.'

So much for the instruments. But in common with several other modern pop



producers, Mike Howlett places equal – if not greater – emphasis on vocals. And his is a fascination that leads him to a dismissal of conventional recording practice, in favour of his own approach to recording the human voice.

'I usually get the lead vocals down at an early stage, because then you know what you're working around. Vocals are very often underrated, especially by technical people and technical musicians. You can have a bad rhythm track with a brilliant vocal and it will be a hit, whereas the same song with a fantastic rhythm track and a bad vocal won't be a hit. The vocal is everything. If you don't have a great vocal you can throw the tape out of the window. A classic mistake a lot of people make is that they spend two months getting a great-sounding rhythm track for their album, and then the vocals go down in two or three days – that's a waste.'

Later on, as I sit in on some of the Impossible Dreamers session, Howlett practises what he preaches. Straight after the basic drum and keyboard tracks are laid down, he sends the band's female singer out to do the vocals. The rest of the band becomes increasingly restless, but the producer continues the vocal work with patience and determination.

It's here, in the control room, that Howlett is in his element. Sitting in the room's most comfortable chair, he motivates the band with relaxed confidence, guiding the recording process amicably, unobtrusively, and successfully.

But how did all this come about? The next day in his large Kensington flat, Howlett takes his time out to tell the story. He was born 35 years ago in Fiji, the son of New Zealand parents. 'I still have a Fijian passport, so I suppose I'm the best Fijian producer in the world, or at least the most successful.'

He started his career as a professional musician in Australia, where he played bass in a band called The Affair. 'We did quite well in Australia, but I wanted to go to England because that was where the best music was coming from. So the band and I went to the other side of the world; I still remember staggering up the shore at Southampton. Sadly, the others got homesick and went back. I eventually went to France where I joined Gong in 1973.'

Just after his departure from Gong, Howlett made a demotape of his own songs on which he managed to get what was – at that time – an unlikely group of people to play along: Andy Summers on guitar, a guy called Sting on vocals, and a friend of the latter, Stewart Copeland, on drums. Howlett recounts the chapter with obvious pleasure.

'Actually, Chris Gutler from Henry Cow was supposed to play on that tape, but he couldn't make it, so Sting brought Stewart along. It was the first time the members of The Police played together. We even did some gigs in Paris at the beginning of 1977.'

The band couldn't get a deal, though. 'I was ex-Gong, Stewart ex-Curved Air, Sting ex-nobody and Andy ex-anybody you'd ever heard of, and the punk thing was just going on, so we weren't a very fashionable combination.'

Meanwhile, Howlett spent a lot of time editing and mixing miles of tape from Gong concerts and studio out-takes, the result being later released as a double album called *Gong Live Etcetera*.

'That was really my first production, and Virgin were very pleased with it. I'd shown that I was able to sift through things and pull them all together, so they kept giving me little bits of work.'

Howlett's production career got its 'first

real break' when it latched on to punk. He did the honours for a Penetration single and a couple of Fischer Z albums, and after that, he realised punk had left a marked change on his musical outlook.

'At the end of my time with Gong I was practising eight hours a day, doing all the scales and trying to become a really great bass guitarist. Then I suddenly felt tired of all that. I realised I could play a two-note riff for four bars that felt 10 times better than all the technical stuff. I mean, I like good musicianship, but that really is something else. B B King's playing is an example of good musicianship, but he's not technically extraordinary – it's just that he's very direct and is saying something meaningful and useful as well. Conversely, a lot of mediocre technical music is just wanking around. *Real* music transcends the sounds and techniques of what somebody is doing – it's a very direct communication of emotions and feelings that nothing else can do.

'So I had a complete reaction to the whole jazz-rock scene at the same time the punk thing got started. Punk did away with all that technique, and I felt really good that it came along.'

Yet Howlett moved away from punk almost as quickly as he'd moved into it, embracing instead the newly-emerging field of techno-pop. For OMD he remixed the early 'Messages' single, produced their second album *Organisation* (from which 'Enola Gay' became a massive European hit), and one track ('Souvenir') from the follow-up *Architecture & Morality*.

Looking back, the producer describes OMD as 'the most hard-core electronic band I've worked with', though they were by no means the only act creating 'electro-pop-disco-stuff' to benefit from his guidance, as A Flock of Seagulls, Blancmange and China Crisis followed them into the Howlett Hall of Fame.

But why move from punk to electro-pop, musical areas seemingly worlds apart?

'Punk was doing away with technique but so was the hi-tech stuff – the difference was that it was using electronics to achieve its aims. The Human League and OMD in their early days were very simplistic bands with a minimalist approach. They wanted to play simple, almost idiotic themes. I like that a lot.

'The best thing about computer music is that it means people with an idea, but with limited playing abilities, become capable of getting their ideas across effectively. The only thing which is important is the vision of the people controlling the equipment. Sometimes they have an understanding that can come out of nowhere. You don't know *why* these people know what they know, because they've never played in bands and have only very limited musical experience. But sometimes they've just got it, a spark, an idea...they know about musical feel and the technology enables them to express that. I find that fascinating.'

What about the (often valid) criticism that computer music tends to be cold and sterile?

'I agree that there's too much of that sort of music around, but I don't think it's because of electronics. It really all comes down to the people who make the music and program the machinery. If they have ideas that invoke emotions, then they can get these emotions in as well. There's no reason why you can't make very emotional electronic music. Anybody can use any of the new technology, and make the most powerful and emotional music possible.

'That cold and sterile image comes from the late 70s and early 80s, when a lot of synthesiser bands were deliberately playing in a robotic, inhuman way. Kraftwerk and Gary Numan, for example, made a statement of *not* swinging. The fact that their music was jerky and incompetent was part of it. OMD originally worked like that, though the heart of their work was that they wanted to make electronic music with feeling – I think I helped them to do that in those early days. It was part of my function as a producer, because they weren't always able, musically and technically, to achieve that.

'I compare the introduction of electronic instruments to that of the saxophone or the piano. People were making very emotional and powerful music and expressing themselves adequately before the piano – it's just that the piano opened up more areas and made one man capable of expressing more than, say, five men. The same goes for electronics.

'I feel music has largely stayed the same since its introduction, but there's a new vocabulary added. I must admit, though, that if I want real depth, I don't really look to today's music; I don't get enough out of it. For real vision, I always go back to the classics like Beethoven and Mozart.'

Thanks to his work with Armatrading and The Alarm, Mike Howlett has now spent a year outside the hi-tech field he felt such an affinity with – and has no qualms about the move.

'I wanted to move out of my alignment with electronic music, because I don't like to be bagged', he comments. 'But I have to admit I'm kind of looking forward to getting back into it now. Electronic stuff is fun, because you can get a whole piece going, link up everything with everything, and still be at the stage where you haven't put anything on tape yet. I enjoyed that, especially with OMD and Blancmange. You can get a real groove in that way, a real party atmosphere.

'From an arrangement and production point of view, there's not much difference between working with a hi-tech act and a more traditional band. In the latter case you're a bit more detached, because the band is out there playing, and you might have one or two of the guys with you in the control room, but you're mostly communicating through the foldback.'

At the time of our interview, Howlett had reached the negotiating stage with a couple of bands in the search for his next production job, amongst them Immaculate Fools and the American band Till Tuesday.

He also expressed an interest in making film soundtracks, and in becoming more directly involved in a current music scene he sees as lacking inspiration.

'I want to get involved in that, it's my hope and my ambition at the moment. I haven't been playing for some time now, so I really have an urge to get back into that again. Also, I feel a little bit disappointed with the music scene at the moment. I think it lacks something. I don't hear bands coming up with anything really meaningful and musically satisfying. There are things like Bruce Springsteen or Madonna, which communicate quite well and sum up a whole lifestyle in their own way. It's all well done, but it's not *new*. It doesn't move me.

'I know there are aspects of pop music which I think are valid and which you have to take account of. One of them is that a lot of pop music serves, what I'd call a socio-biological function. For example, teeny-bop music like Duran Duran gives pubescent teenage girls a way of coming to terms with their new-found sexuality in a safe way. It's almost like a tribal ritual. If you understand a lot of pop music in this way, it's meaningful and it serves a function.

'I think in the midst of all this, you get music which can communicate other things to people, ideas and emotions that are far beyond words and which can't be expressed in any other way. I hold the view that music is important and has a great influence on people and society. It changes the way we perceive the world. Through music, it's possible to communicate a wider understanding of who you are and what the world is like. And personally, I've always seen it as my function to help create conditions in which this communication is possible.'

Few producers, in any field of musical endeavour, have such insight. ■

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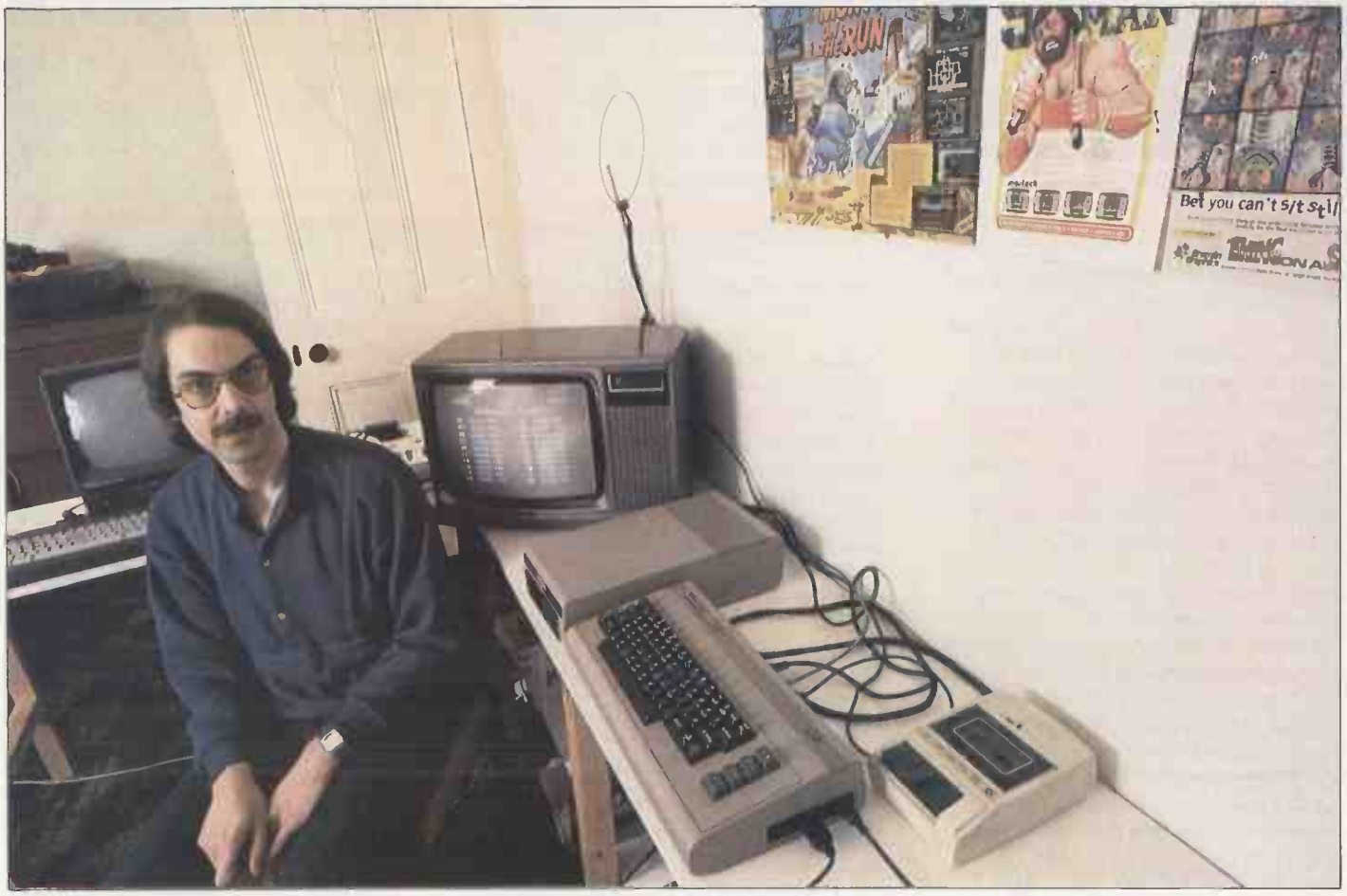

LIVING OFF VIDEO

Rob Hubbard is Britain's top computer music programmer, creating sounds and melodies for video games. His work is a constant struggle to coax impressive sounds out of limiting hardware, and his success story is something every modern musician could learn from.

Interview and photography *Matthew Vosburgh*

Suppose I offered you a sizeable amount of money to provide the electronic soundtrack for a project of mine, due to appear on television screens across the country in a couple of months. How much equipment do you think you'd need?

A polysynth or two, certainly, and a drum machine. An old-fashioned monosynth would probably come in handy for bass and lead, and a sampler would be nice for 'natural' sounds. Then, to control everything, you could use a Commodore 64 running a MIDI sequencer program like the Steinberg reviewed in E&MM last month. Of course, you'd also need some recording gear (or a studio that has some), so that you could devote all your ideas to tape, and add just the right amount of carefully tailored digital reverb at various points.

But there's a problem. You see, on this project, you aren't allowed to use any effects. Or tape recorders, or drum machines, or keyboards. What does that leave you with? SID, that's what. For the uninitiated, SID stands for Sound Interface Device. It's built into every Commodore 64 (easily the world's biggest-selling computer) ever produced, and as you may have guessed by now, the soundtrack I've been talking about is for a C64 video game.

Writing music for the C64 is one of the easiest, certainly one of the quickest, ways of driving yourself insane. Sound has always been the poor

relation of graphics in the computer game world, proof that humans are more interested in what they can see than in what they can hear (this explains the success of Five Star). Playing second fiddle to the graphics means you get allocated only a tiny share of the computer's memory, typically between 4K and 6K. Not only do you have to fit your tune into that space, you also have to find room to define **all** your sounds – not just for the music, but also for the game-activated sound effects.

Worse than this, everything you come up with has to be turned into sonic reality by SID. The SID chip is a (very) primitive analogue device. It has three sound channels, each with its own volume ADSR, and can produce one of four waveforms. There's no LFO, though it is possible to steal one of the three oscillators and use it as one. You can also sync two channels or ring-modulate one with the other, which helps to liven things up a bit. Finally, there's a three-state filter which would doubtless come in very handy if only you were allowed to use it. Trouble is, the filters on old 64s are calibrated so differently from those on newer machines, that a piece of filter-inspired commercial software might sound great on one person's 64, but utterly appalling on another's.

With these limitations to deal with, you might expect the final result to consist of a very short tune played repeatedly by thin, uninteresting bleepy sounds (a bit like Five Star, in fact). And that's exactly what most game soundtracks did sound like, until Rob Hubbard came on the scene.

Rob Hubbard is more than just the top music programmer for the Commodore 64. He just about invented the entire profession. When you listen to one of his soundtracks, you're convinced he's managed to sneak in a Casio CZ, an Akai AX80, an OSCar and a digital drum machine into your computer while you were reading 'War and Peace' waiting for the 64 disk drive to load the program. Somehow, Hubbard manages to coax powerful bass sounds, pseudo-digital DX-type voices, a large variety of hefty lead sounds, and some pretty decent Simmons drum imitations out of SID. And impressive as these sounds might be in isolation, the real shock comes from hearing a bassline, two melody parts, a bass-and-snare rhythm track and various percussion effects, all running at once in a compelling piece of music that's full of variations, and lasts quite a few minutes before it repeats.

Clearly, Hubbard is a major talent, a programmer capable of conjuring whole orchestras of sound from even the humblest of sources. And unusually for a man so obviously gifted, he is keen to share his programming secrets.

'The basic way that it works', he says, 'is that I have in software what you'd call programmable patches, and the "sequencer" part of the memory flips between these. This means that I can use a channel to play a note in a bassline with one sound and then, a semiquaver later, flip it over to use in a percussion part. Things are carefully written so that although there seems to be a lot of things happening at once, I never need more than three notes on any given beat.'

That's rather like being told by an expert juggler that it's easy to keep six balls at once: you just arrange it so that you only ever have to catch two at any given moment. But although this goes some way toward explaining how Hubbard gets so much out of three channels, it does nothing to clarify the sounds themselves.

'That's all down to software. I have an interpretor program whose job it is to take my music data and drive the chip. This program contains routines that perform various software tricks. For instance, I have routines that give vibrato without having to use another channel as a modulation oscillator. I just generate the LFO in software, and it can have absolutely any waveform I choose to program into it.'

Some of Hubbard's other software routines join forces to produce even more unlikely effects. On one game, a delayed vibrato routine merges with another which gives pitchbend: the result is a solo that could almost be generated by a Minimoog. And the man's software tricks don't end there, either.

'Controlling all the aspects of sound from software, I can do tricks on the Commodore that you can't do on a synth. For instance, I can start a note off with a channel set to white noise, and then switch very rapidly to another waveform, or indeed change any of the other parameters while a note is running.'

Hubbard also makes much use of the SID chip's unusual ability (thanks to its 16-bit resolution) to play notes that lie **between** the black and white notes of a normal keyboard (to have the same resolution on a piano, you'd have to build a keyboard over 65,000 notes long). This means you can do some **extremely** odd things to pitch whenever the fancy takes you, and provides Hubbard with an almost limitless range of sound effects and other-worldly electronic voices.

Thus Rob Hubbard's extraordinary sounds are a combination of two things: his extensive library of clever routines, and the fact that his 'sequencer' has direct control over the astonished SID. The first merely compensates for hardware problems (and we all get those now and again), but the second opens up whole new horizons of analogue synthesis.

'If you had that degree of software control on something like a Prophet 5 or a Roland JX8P', the programmer asserts, 'you'd be able to generate some amazing sounds.'

Yet today's synth market isn't exactly bursting with instruments offering that degree of control, though Oberheim's Matrix Modulation system (as used on the Matrix 6 poly and its forthcoming modular derivative) comes close. Hubbard, meanwhile, has a vision of MIDI sequencers controlling synth parameters through System Exclusive data in real time, forming music systems that open up genuinely new programming paths. At the moment, that vision seems a little way off: the average MIDI synth and sequencer are like two people signalling clumsily to each other in opto-isolated morse code, but never actually meeting.

Evidently, Hubbard would like to see a return to the sort of programming fun that could be had in the heady, pre-MIDI days of using synthesisers. The days when, providing you were handy with a soldering iron, you could connect anything up to anything with CV and gate leads, not just to play one instrument from another, but to get each machine to feed off the other to produce sounds that couldn't be generated by either device in isolation. It was at that time that Hubbard served his apprenticeship in getting the best out of limited resources, with a Korg 800DV monosynth (his first, which he still has), a Multimoog, and a rhythm section comprising Roland Drumatix, Bassline and MC202 Microcomposer.

'It was an amazingly creative time. It was great fun, linking everything up, running everything off triggers. I used to build loads of E&MM modules, especially the percussive ones. The best project was one that had six little drum pads on it, which sounded like a set of electronic bongoes. I've lent that to a mate of mine, and somebody else asked if they could borrow it last week – so it still has its appeal, even today.'

Hubbard now gigs regularly with a club band using a DX7 (**NB** – a DX7 is a large lump of metal and plastic that follows you wherever you go, and is on television more often than Terry Wogan), continuing a tradition of playing music that started with childhood music lessons. He dropped out of University to play keyboards in a band, but when they didn't make it, he went to music college instead, later working with long-time collaborator Steve Daggett to produce a half-hour electronic musical called 'Work', ►

► entirely on four-track. As I write this, Tyne Tees Television are working on a cut-down version of the piece.

But what led Hubbard to add a Commodore 64 to his equipment list?

'Strangely enough, it was E&MM that made me get one. It was when the computing side of the magazine was starting to expand, and the 64 looked like the best thing to get.'

People who buy 64s either give up programming or learn machine code, as the BASIC is not only slow (all BASICs are slow) but also gives you almost no access to the machine's music. Luckily, Hubbard took to coding like a journalist to alcohol, and was soon working on a serious program.

'At the time, E&MM was showing all this highfaluting educational software that was coming out of America for the Apple, and machines like it. I thought I could write something like that for the 64, and be the first in this country to do it. So I wrote this piece of educational music software, all notes on a stave, "find the mistake", and that sort of thing. But with Britain being ten years behind the States, not in its brains but in its attitudes, I couldn't find anyone who was interested in marketing it.'

Not discouraged, Hubbard hit upon the idea of becoming a specialist music programmer, providing the music for other people's games. He set to work developing his unique 'system', and, after a lot of mailouts, telephone calls, and general hassling, finally managed to get some work programming.

His first assignment was to produce the music for a game called 'Confuzion'. The sounds were by no means Hubbard's best, but magazine critics were bowled over by them, gave the game rave reviews, and launched the programmer as a successful freelance.

These days, he's keeping an eye out for new machines with greater music potential. He was especially annoyed when the Atari ST, a computer with so much to offer in terms of speed, memory, resolution and even MIDI, turned out to have the same sound chip as the Amstrad 464.

'It's a poxy chip, that', he complains. 'It's only got two waveforms: square wave and white noise. Also, it hasn't got any ADSRs in hardware, and the resolution on pitch is only 12-bit, so there are tuning problems.

'The new Commodore Amiga seems to me to be the only computer which has sound facilities that are a step forward from what I'm using now, rather than a step back.'

So Hubbard is hoping to get his hands on an Amiga as soon as possible, and judging by what he's managed to squeeze out of SID, he and Portia – the Amiga's rather more impressive sound chip – should make beautiful music together.

In the meantime, Hubbard is making a comfortable living from writing on the C64. If you have one, you can find some of his most impressive work on two games: 'Crazy Comets' on Martech (very New Order, this), and 'Commando' on Elite. Although Hubbard didn't write the melodies on 'Commando' as it was a conversion from an arcade machine, he has done an astonishingly good job of converting the original music, which was written for a six-voice system.

Thanks to performances like these, software houses now call him, and his work continues to get rave reviews. That's quite an achievement given that the computer press is almost as fickle as music magazines, but not surprising when you consider that, whatever else he might do, Rob Hubbard rarely puts sonic pyrotechnics before good music. He's not in the business of making people say: 'My God, is that really coming out of my 64?'.

Hubbard is really a musician first, a programmer second. He's a composer who's been forced to develop incredible programming skills in order to drag his music, kicking and screaming, from limited hardware. And in that respect, of course, he's no different from any other musician trying to get to grips with modern technology. ■

REVERB IN WONDERLAND

With the help of some clever new technology and the elimination of parameters you can alter yourself, the Alesis MIDIverb looks like becoming one of the most competent digital reverb systems available – and at a price that's staggeringly low.

Paul White

Sheer inspiration, that's what it is. In the recording industry, the adage 'give the people what they want' is usually replaced by something like 'give a few people what the rest can't afford', but this is one machine that goes against all that. In fact, it goes against almost all the conventions of designing, producing and marketing a digital reverb system. The result of this disregard for tradition is the Alesis MIDIverb, a machine which is *exactly* what the people want, at *exactly* the sort of price most of them can afford.

Six months ago, nobody in the UK had even heard of Alesis, a small Stateside company engaged in producing outboard studio FX units. In six weeks' time, every self-respecting music shop in this fair isle will be trying to get its hands on Alesis goods, and specifically the MIDIverb.

First things first. The MIDIverb is a digital reverb, whose presets can be selected remotely via MIDI – hence its catchy title. In fact, presets are all the MIDIverb has, since it's equipped with no user-variable parameters. Instead, it offers 63 preset reverb effects with decay times of between 0.2 and 20 seconds, and including a selection of gated and reverse programs. All the preset effects are listed on the top panel for easy reference. The MIDI channel on which the MIDIverb receives its patch-change instructions can be set anywhere in the 1-16 range, but don't panic if you don't have any MIDI gear: you can still select programs from the MIDIverb's front panel.

The MIDIverb's physical design is as unconventional as the rest of it. Its circuitry is contained within a diminutive free-standing plastic box, simple yet stylish, which must have cost a small fortune to tool up for, and which makes the device the only non-rack mountable digital reverb on the market. The good thing about the Alesis' non-rack format is that you don't need a remote controller to use it on a flat surface alongside a mixing desk, say; power comes from a small external unit linked to the machine by a custom cable.

Like Alesis' costlier XT:c, the MIDIverb's output is in stereo, derived from a mono input. There *are* two inputs for use with a stereo signal, but although the dry signals emerge from these outputs in stereo, the reverb effect is derived from a mix of the two inputs. Using the MIDIverb with a mixer, you'd probably be best off working with just the one input, setting the Balance control (inconveniently located on the machine's

back panel) to give only the reverbed part of the signal, so that this can be remixed with the original signal in the desk either by using the effects returns or spare input channels.

A word about the MIDIverb's specifications and what they mean. It has an excellent 80dB dynamic range (thanks largely to a 12-bit sampling resolution), so it comes as little surprise that the unit is blissfully quiet in operation, with the hiss and hum generated by the effects send circuit in my mixer swamping any noise the reverb may be generating. If you grossly underdrive the MIDIverb so as to bring up its own residual noise, close examination shows that this is nearly all quantisation noise, which reduces in level as the reverb dies away.

Frequency response isn't quite so vital a consideration (though some people keep rabbitting on about it nonetheless), since natural-sounding reverb contains very little in the way of extreme high or low frequencies. The MIDIverb uses a 10kHz bandwidth, something which would be barely acceptable on a digital delay, for example, but which produces very bright reverb effects when required to do so.

Input sensitivity has been set at −10dBm and input impedance at 50K, so the MIDIverb should be compatible with a wide range of recording gear, and at a pinch you could plug a guitar directly into the unit, though you'd be better off using it in a conventional effects send/return loop. The output impedance is low, so you shouldn't have any matching problems there, either.

MIDI In and Thru sockets are to be found on the rear panel, but there's no MIDI Out, as the MIDIverb is in effect taking orders, not giving them. There's no way you can set up which preset is selected by which patch-change number, so depending on whether your controlling MIDI instrument starts counting from one or zero, preset 10 will respond to either patch-change 9 or patch-change 10. This means that if you're using a synth to select reverb effects matched to specific sounds, you have to store the synth sounds at the patch numbers of the effects you want on the MIDIverb.

With a MIDI sequencer things aren't so restricting, as you can call up any patch change on a separate channel to those on which your synths are operating.

This leaves at least one important question unanswered. How is all this possible in so small a box, and at so low a cost? Turns out it's all down to a thing called RISC, which is jargonese for Reduced Instruction Set Computer, which is jargonese for a stripped down, streamlined form of microprocessor. Now, digital reverb programs need to perform a lot of simple mathematical calculations very quickly, so there's no point using a large, sluggish processor capable of undertaking all kinds of tasks it'll never be called upon to perform. The necessary maths can be done quicker and cheaper using something less versatile but more refined, hence the adoption of RISC architecture on the MIDIverb. The outcome of this is a denser, more natural reverb than any other machine in this price range can manage.

On the preset front, what you're given are 50 basic reverb settings, with several variations of reverb character for each decay time. Rather than call the effects rooms, halls, plates and so on, Alesis describe their sounds as being 'warm', 'bright' or 'dark'. If that sounds more like a weather forecast than a description of reverb effects, remember that West Coast Americans talk like this all the time. Also shown on the top-panel listing is the subjective size of the reverberant environment for each preset; not surprisingly, this gives you a choice of 'small', 'medium' or 'large'.

Thus, preset 24 offers a decay time of 1.6 seconds and is both 'medium' and 'bright' – this gives something akin to a very toppy plate reverb. If you want something a little more mellow, you can choose preset 22, which has the same decay time but is 'small' and 'dark': this results in something like an extremely live outside loo.

Pre-delay is designed into these presets according to the size and character of each simulated environment, so to some extent, you're getting the advantages of a room simulator in that all the parameters complement each other regardless of which preset you choose.

In addition to these more or less conventional reverb settings, there are also no fewer than nine gated effects and four reverse presets.

Now comes the crunch. Specifications are all very well, but reverb is a very subjective thing. Well, I've used most of the digital reverb systems currently available, from the humble Yamaha R1000 to the AMSs, Klark Tekniks and Yamaha REVIs of this world – and I can tell you that I was very impressed. Any worries that the Alesis' presets-only format might prevent me from creating a full range of different reverb effects evaporated almost as soon as I started to use the machine; there weren't really any common effects that I couldn't get hold of in some form or other.

Even my most stringent tests with digital drum voices failed to find any fault with the way the MIDIverb sounded. There was none of that clanginess associated with budget digital reverbs, and the stereo depth was pretty convincing. Even the gated effects had a built-in panning effect, and all were brash and exciting. As for the reverse effects, they were some of the best I've heard at *any* price – process a snare drum using a reverse setting, and you can even hear the impact of stick on drum at the end of the envelope, just as though it were a tape being played backwards.

Results were no less impressive using a synth. Seems the MIDIverb is capable of transforming an insipid polysynth sound into a swirling string section, or adding an indefinable ethereal quality to flutes and chimes. Vocal treatments are no problem, either: the Bright settings are particularly effective in giving a solo voice extra sparkle and depth.

As a writer and studio owner who comes up against dozens of new music machines in an average reviewing year, it's not often I find a piece of gear that really excites me. Yet here we are at the beginning of the year when all the other manufacturers are just talking about their new products, and this one turns up in the flesh, sneaks up behind me, and hits me over the head with a brilliant specification, a fine sound, and a record-breaking sub-£400 price tag.

Even ignoring that price, the MIDIverb is a damned good unit that does almost everything a digital reverb should do, so long as you don't want to get involved with programming your own effects settings. Anyone who reckons there aren't enough variations available on the MIDIverb is kidding themselves: even top engineers tend to have just half-a-dozen favourite AMS settings that get used to the exclusion of all else.

The MIDI is a great bonus to those who sync their mixdowns to a MIDI sequencer, and for that perversion known as playing live, its applications are mind-boggling: now keyboard players can have a studio reverb sound remotely selectable on stage.

And if you have a digital reverb already but suffer from the perennial problem of needing different effects settings for drums and vocals when it comes to studio mixing-down, you should be able to afford one of these to use as a second reverb.

Some might say the MIDIverb signifies the death of the programmable effects unit as we know it, but personally I doubt it. What it undeniably achieves, at a time when most professional-quality studio effects are still beyond the reach of most musicians, is the bringing of fine digital reverb patches to a completely new market, probably several. I've ordered mine already. ■

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IVORY TECH

For some while, Yamaha's range of CP keyboards has dominated the pro electric piano arena. But now other Japanese manufacturers are fighting back with some new piano technology, and Technics' new PX1 is leading the way.

Julian Colbeck

Three days ago, the name Matsushita Electric meant precisely nothing to me. My loss, obviously, since they turn out to be the 24th largest company in the world – a ranking several feet above Yamaha on the leader board, so I'm told. They make Technics equipment, among many other things.

Even Technics is hardly a name on the lips of most ardent hi-tech instrument afficianados, but recently they've been nuzzling into this area of the business with some stunningly whizzo home organs that use PCM digital technology. The question, I guess, was never *could* they move their considerable bulk towards the rock arena, so much as could they be bothered.

Well, the first indication that they could came in 1984, when Technics launched a PCM digital piano called the SX-PV10. The PV10 attracted plenty of attention, but suffered mainly through being sold only in traditional Technics outlets, ie. home organ shops.

This year sees the inauguration of Technics' Electronic Musical Instrument Division, which should change all that. Their first release, due in the shops this month, is this very swanky-looking PCM digital piano, the SX-PX1 (Technics seem to prefix a lot of their instruments with the letters SX, presumably to set them apart from machines in other product areas).

Now, this piano is a very different beast from the PV10, since its keyboard is not only wooden and weighted but actually has a hammer action to boot. The PX1 also sports an upmarket MIDI spec and can therefore be used as a MIDI master keyboard of sorts. Finally, it has a simple-to-operate two-track real-time sequencer, whose total memory capacity of 2700 notes can be expanded ten-fold by using a Technics Digital Disk Recorder and a single 3½ inch disk.

But the main difference between this Technics piano and its predecessor (or almost any other currently available digital piano, for that matter) is the work that's gone into the production of, the technology behind, and indeed the quality of its sounds.

A word about the 'work that's gone into/technology behind' bit first. I've no way of checking this, but it's claimed that out of 88 notes along the PX1's keyboard, there are no less than 80 different samples, and that from these, each note was further sampled at seven different velocity levels. The idea behind this mega-multi-sampling is that each note can respond (almost) authentically to the way in which it was played, without having to rely on filters and extramural, non-sampled gadgetry to reproduce the sound of an ordinary, touch-sensitive piano. By now, you've probably guessed that the 'conventional' hammer action is a clever ruse by which the manufacturers can reproduce the feel of an acoustic piano. Indeed, the fulcrum is positioned at

the same distance from the keys as you'd find on an acoustic grand piano.

But more about the action in a minute. What about the sounds? Well, there are six in all: two acoustic pianos, two electric, a harpsichord, and a (small C) clavi. Pushbutton-selected on a small ledge between the keys and the lip of the lid, the sounds are uniformly and almost unutterably superb.

The piano pair could be labelled upright and grand; their tones are pretty similar but one is slightly sharper and more aggressive, the other rounder and more full-bodied (sounds like bloody wine, I know). The two electrics could be compared to Rhodes MkV and knackered Rhodes circa 1973 (ie. brilliant at times but potentially unstable, the difference being that the PX1's version isn't unstable at all). The harpsichord is realistic to the point of not being velocity-sensitive (well the real ones aren't, are they?) and is suitably spikey and 17th Century. Francis Monkman will love it. Finally, the good old funky clav is good, old and funky. Great for good, old and funky players playing good, old and funky music. In pubs.

The only slightly worrying aspect concerning all the sounds is that, during the test, I could hear more than a suggestion of digital 'wheeze' emanating from the speakers (which are not built in, by the way). I'm told this'll be dealt with by a noise reduction system (or possibly an improved version of same), so the production models will be silent. But as I mentioned at the time, a promise of improvement, however sincerely delivered, can't prevent a reviewer from pointing out faults if he's invited to review a pre-production model. So check out the noise factor. I don't think it would overshadow your music, but it could be mildly annoying, especially during recording.

The second, similar misgiving (similar in that this too is to be improved before production gets into full swing) concerns the action. It's good already, make no mistake, but – and this is very difficult to put into words – it feels lumpy. It's as if there's a piece of corrugated metal underneath the hammers which makes the response uneven. Technics are as unhappy about this as I am, and are now busy replacing the felt-lined cross-piece (which the hammers bang up against) with a rubber-lined one. Looking at the mechanism, it seems logical that the improved 'rubber' lining should do the trick nicely.

You're given a number of tone-modifying possibilities: a stereo chorus and tremolo are included (and independently controlled) and effects send and return jacks allow further devices like DDLs and reverb systems to be patched in at will. There's a slider-operated key transposer, a three-band EQ (the mid-frequency is parametric) and slider-operated sustain and decay controls. This last pair seem superfluous, since both can be governed by either your fingers, or your foot on the sustain pedal. They're best left at their 'normal' position, I found. Finally, there's the obligatory overall tuning control.

Now onto the Play Sequencer, as Technics call it. Very simple, really. All you do is choose to play with or without a metronome (and if you choose with, select your speed), press Record, and off you go. It's real-time only, and you can store sequences in one of two channels. These can be combined, however, for one longer piece of music.

As I mentioned, using the Technics Disk Recorder extends your note storage capacity infinitely. The disks can store as many as ten individual pieces, and these can be replayed individually using the triple-function (so called because they look after note and MIDI channel selection as well) as song selectors. The sequencer stores velocity, pedal, and tone information as well as the notes, and if for nothing else, is useful for accompanying yourself while practising.

Sounds *"A knackered version of a Rhodes circa 1973 could be brilliant at times but potentially unstable; the PX1's version is also brilliant, but not unstable at all."*

Technics have stopped just marginally short of making the PX1 a first-class MIDI master keyboard. You can control a pair of external MIDI sound sources, assigning them to split positions on the keyboard, controlling patch numbers, and even storing up to ten MIDI combinations in so-named MIDI memories. This information can be off-loaded onto disk, too. The one serious master-keyboarding omission is the lack of a pitch or mod wheel onboard. If you're combining synth sounds with the PX1, this might prove limiting.

Now, the most serious question to answer is: who will be tempted by the PX1? Well, no matter what fancy types of synthesis emerge from east and west these days, there's an enormous and continued interest in 'straight' piano sounds. Ask any hire company. I bet a Yamaha CP80 remains one of the most requested keyboard instruments of any kind. And when you consider that a CP80 costs in excess of £1000 more than the PX1, the Technics begins to look like a serious proposition. There are a number of other digital piano designs currently being developed by rival Japanese companies, so only time will tell whether any of these compare favourably with the PX1. In any event, Technics have beaten them all to the marketplace, and that's what matters.

In terms of roadworthiness, the PX1 collapses into a compact and easily transportable unit which can roll merrily along on castors, the instrument protected by a hard metal case. It weighs a not inconsiderable 110kg (that's 242.5lbs for imperial measurement buffs).

With all due respect to the CP80 – even the MIDI version – if I were contemplating using a dedicated piano-type instrument either on the road or in the studio, I would unhesitatingly choose the PX1. The sounds are just as realistic in the piano department (including, of course, a bottom octave that's actually in tune) and there's a far wider range of options in both sound and control departments. ■

Price *£3599 including VAT*
More from *Technics, National Panasonic UK, 300 Bath Road, Slough, Berks ☎ (0753) 34522*

Vinyl T·A·K·E·S

Erstwhile E&MM cover artists Chris and Cosey contribute this month's feature record, a new long-player that houses a series of subliminal messages in addition to some high-technology music for an industrial age.

Chris and Cosey
Techno Primitiv

Rough Trade LP

Latest album from the ex-Throbbing Gristle duo who believe that 'everything that's ever been thought of as new and powerful has been used for an evil purpose'.

Specifically, the subject under discussion is the

inclusion of subliminal cuts on the new LP. It's a subject the duo see as a grey area, the sort of thing 'we've always liked dabbling in'.

'Technically the use of subliminals is illegal on ITV television, but legal on BBC', says Chris.

'As far as we know, it's legal on records over here, though in America it's another grey area. It's funny, but we picked up a copy of the album in Holland and they've removed the disclaimer from the sleeve.'

After the adverse reaction to the use of subliminals (minute extracts of material that penetrate the minds of the audience without being subject to conscious awareness) in TV advertising a few years back, it seems a risky idea to entertain now.

'We're not using them in any subversive way, or any way that would be detrimental to anyone listening', Chris continues. 'It's not any sort of command or order.'

'Their main use is to suggest an atmosphere for a track' explains Cosey. 'That's what they're there for and that's what they do. A lot of people think it's a brain-washing technique, but it's just another part of the music to us.'

It transpires these aural subliminals can take many forms and be of varying duration and intensity; but much more than that, the pair aren't letting on.

'We used to use them more than we do now – there are only three or four on the new LP – and we never say which tracks they're on. We often get people writing in saying what they think they've heard, and occasionally they're spot on! But we forget ourselves where we've put them; working on eight-track, they often get bounced down so it's not possible to find them again.'

But let's not blow this up out of all proportion. *Techno Primitiv* is about more than just subliminals. It continues along C&C's established rhythm-heavy direction, and follows a period of film work that initially hindered its progress.

Cosey: 'It started off as something totally different. It was more tribal and heavy, hence the title. We've always felt that unless something goes smoothly we should forget it. At the beginning we'd just done this soundtrack and we started recording the album in the same vein. But we'd saturated ourselves with it and we wanted something with more space. If we hadn't done the soundtrack, the album would have come out totally differently.'

The duo's equipment line-up remains basically unchanged from previous recordings, but this album exhibits a markedly different approach to production. In a nutshell, the music has been given more room to breathe. Rhythms come by courtesy of Roland's TR808, 707 and 727; synth sounds from a variety of the old and new (a Roland System 100 stands alongside a CZ101); and sampling is arranged through a series of customised digital delays. It's the delays that are responsible for the LP's most unusual track: 'Haunted Heroes'.

'It's the only track with no rhythm on it. Cosey had a cassette of a TV programme with a Vietnam veteran talking about what he'd been through. We didn't want another '19'; we wanted something with a bit of respect and gentle atmosphere. So we sampled a short section from a record of a choir and fed it through all the delays in series, and fed the output of the last one back into the first. Then we fed it through the reverb and sampled it all back into the Korg delay, building up all these layers of the choir.'

A little guitar and CZ101, and the duo had created a serene and haunting track entirely in keeping with their aims. Techno, yes. Primitive, I'm not so sure. ■ **Tg**

Brian Eno
More Blank Than Frank

EG LP

No, not a new ambient masterpiece by Brian Eno, but an autobiographical compilation of favoured material recorded between 1973 and 1977. It's intended to accompany and compliment the book *More Dark Than Shark* (Faber & Faber), which showcases a collection of Eno's lyrics accompanied by illustrations from the hand of Russell Mills.

For those not familiar with Eno's work, *More Blank Than Frank* covers four albums: *Here Come the Warm Jets*, *Taking Tiger Mountain (By Strategy)*, *Another Green World* and *Before and After Science*. These are all pre-ambient recordings, and each one contains a selection of the quirky, offbeat songs that have inspired a generation of musicians to throw away the rule book and start experimenting. Instrumentation ranges from conventional group combo fare to solo piano and voice, while Eno's lyrics, hastily written with little consideration for 'meaning', nonetheless succeed in conveying atmospheres aplenty.

The four albums are well represented here (should one question an artist's own choice of material?), and I missed only one personal favourite, 'The Fat Lady of Limbourg'.

In the absence of any new songs from the man, this compilation is a welcome and timely reminder of Eno's ability to comfort, disturb, annoy and inspire. ■ **Tg**

Sakamoto & Dolby
Field Work

10/Virgin 45

Thomas Dolby's last single, 'May The Cube Be With You' was forgettable, and probably best forgotten. But those that were disappointed by it can now breathe a (small) sigh of relief.

'Field Work' is released as primarily Ryuichi Sakamoto's work – from his new album *Illustrated Musical Encyclopedia* – but it's Dolby's contribution that's the more immediate. The latter handles the vocal in a style reminiscent of his earlier work on *The Golden Age of Wireless*, with lyrics that are more continual a play on words than the pursuit of a theme, and embellishments of the distinctive choirboy harmony variety.

Sakamoto's input to the venture is more obscure, but I have no doubt that somewhere in amongst the

synth melodies, the pounding sampled drums and the complex Fairlight programming, his presence has been felt.

'Field Work' is a melodic, uptempo number which will probably be ignored by the charts for which it's intended. Objectively, the song doesn't really go anywhere special. But it does at least have style, especially on the 12-inch (Long London) mix. The flip side of the 12-inch is also well worth a listen, and I'm not giving anything away by saying that it's definitely not pop, and is over 15 minutes long.

A more than decent collaboration between two enterprising musicians, 'Field Work' confirms the spirit of adventure is alive and well in both of them. ■ **Tg**

Demo T·A·K·E·S

A composer of ambient music from Southampton and a Glaswegian five-piece sci-fi band are among the acts whose demo tapes are reviewed this month. Send yours to: DemoTakes, E&MM, Alexander House, 1 Milton Road, Cambridge CB4 1UY.

Hamish Currie needs a stage name – or maybe he already has one. Whatever, Currie's songs deserve to be taken more seriously than his moniker. The first of the three sent to us, 'I Am the Only One', is a 16-track demo and is obviously Currie's personal favourite, as the remainder are only home MT44 four-track affairs. The song itself is good, but some stylish sax work from guest Conn Underslung (stage name?) steals the show from an unremarkable vocal delivery. The rest of the instrumentation is Currie's own work, and a lovely, rolling synth bassline holds the keyboard-and-guitar rhythm track together nicely. The last number, 'Practical Considerations', is easily the worst executed of all three, yet is a potentially *excellent* single. The song has a wicked hook and an intriguing lyric, both of which shine through despite a stumbling drum pattern (a flaw throughout, this) and some lamentably timed manual sequence work. This man has talent.

On a more ambient note, Southampton's **Brian Marshall** presents us with *At the Headlights of Can-Garoo*. The tape demonstrates an appalling taste in titles that's completely at odds with the music it contains. Names like 'The Crystal Cave' and 'Lost in Light' just don't do justice to the richly emotional textures Marshall has managed to conjure up with the assistance of a Rhodes Chroma – about which he is particularly enthusiastic – and a few effects. Captured on another Yamaha MT44, this tape is a tribute to one synth player's programming sensitivity and understanding of how to manipulate atmosphere. Although the recording is only four-track, the simplicity of the music and the quality of the programming make *At the Headlights...* a remarkably successful venture which only a little hiss undermines.

Meanwhile, **PJJ** sound just like a pop band. That's the trouble – they could be almost *any* pop band. And the situation is only exacerbated by the inclusion of a number of cover versions: Howard Jones' 'What is Love?' and 'Hide and Seek', Kajagoogoo's 'Too Shy' and Yazoo's classic 'Don't Go'. The band's musical inclinations are fairly well represented by the chosen covers, but as things stand, PJJ lack the flair that gave their idols their respective breaks. To their credit, they have managed to present a competent demo with a fairly modest line-up of equipment: Juno 106 and CZ1000s hold the songs together, an MC202 proves its continued worth by making short work of the sequences, and a TR707 hammers out continuous rhythms that would leave its human counterpart knackered. 'Life on the Streets' (an original composition, no less) is one of the higher points, displaying some resourceful synth programming, lively sequences, and a nice line in staccato synth brass. There's also a taste of the live PJJ to prove they can carry it off on stage. But the weakest link, once again, is the vocal delivery: an essential ingredient of good pop music (and many other kinds, too) that is the failing of so many young hopefuls.

Five Glaswegians discover a common obsession with Science Fiction and form a band around their passion. Calling themselves **CE IV**, they are responsible for a demo comprising two songs: 'Warminster Night' and 'Starship Scrapyard'. Both are original compositions that reach your ears without the assistance of drum machines or sequencers. Yes, unfashionable as it may seem, these people are actually using their fingers. Unfortunately, details are scarce: the keyboard is a Casio CZ1000 but its player remains anonymous. Anyway, the result of all this is two rather conventional if well-executed songs. The keyboard programming could be a lot more imaginative (especially seeing as the band are supposed to be presenting a futuristic image), and the songs would benefit greatly from stronger vocals. There's a lot of emphasis on guitar work, which seems rather out of context, even if it does fit the bill musically. ■ **Tg**

Live T·A·K·E·S

One of the world's foremost minimalist composers – Terry Riley – recently visited these shores for his first-ever UK concert appearance. On the evidence of this one, we're hoping there'll be many more.

Terry Riley

Logan Hall, London

One of the original minimalist composers, and an influential figure during the 60s and early 70s, Terry Riley has had a low profile in recent years. Astonishingly, his recent one-off performance at London's Logan Hall was his British live debut. With luck, the packed house will have convinced Riley to make a return visit before too long.

A long-standing interest in intonation and timbre has led Riley to use electronic instruments in the past (notably Prophet 5 and Yamaha YC45D organ), but the piece he chose to play in London, 'The Harp of the New Albion', was for solo piano tuned in just intonation (a subject which a certain Mr Eno has waxed lyrical about in these very pages).

The result was an uninterrupted 50 minutes spent in an extraordinary and captivating world of sound, reminiscent of the more exotic non-Western musics and John Cage's experiments with prepared piano. It was equally possible to detect echoes of Bartok and Debussy (themselves influenced by folk and exotic music), while the drone figures and improvisatory flourishes of 'Harp' were evidence of Riley's long association with and study of Indian music.

But to view Riley's music as shallow, watered-down orientalism would be wide of the mark. His own vision has always been strong enough to transmute his influences into a music that is personal yet global, and 'The Harp of the New Albion' is no exception.

This is a vibrant music. Not dance music in the conventional sense, but nonetheless music that itself dances and sparkles with a rhythmic verve that at times leaves you breathless, whether it's the build-up of great washes of sound underpinned by fiercely insistent rhythms, or a series of lightning runs in the right hand that seem to leap off the keyboard.

It's also a delicate music that requires you to have your ears well tuned in if you're to catch all its nuances. Like much of Riley's music, improvisation rather than a fully written-out score lies at the heart of 'Harp', and the remarkable consistency of invention in the composer's performance of the piece showed a mature improvisor at work.

The concert was unusual and unpredictable, but it was a breath of fresh air, too. ■ **St**

Patch W·O·R·K

Wanna free subscription to E&MM? Then send us your favourite sounds for inclusion in Patchwork, and if one of them gets to the printed page, you'll receive the next 12 issues of your favourite musicians' magazine (either that, or you'll get E&MM instead).

So get twiddling (or digit pushing), and send your patch on a copy of an owner's manual patch chart (coupled with a blank one for artwork purposes), including a good description of the sound and its musical purpose in life – and don't forget to include your full name and address on each chart. The address to send to: Patchwork, E&MM, Alexander House, 1 Milton Road, Cambridge CB4 1UY. ■

Korg Poly 800
Medley for MkI
Mark Ballamy, Surrey

Are you a jazz afficionado? Do you own a Poly 800? Then have we got some sounds for you! We thought we'd see the MkI off in style with no less than eight patches for you to program into your Korg.

The titles are pretty self-explanatory, but the first five sounds are intended for jazz soloing or fusion work, while the mellow Double Bass is useful as an accompaniment, played by the Poly 800's built-in sequencer. The final pair, Glockenspiel and Harp, are quite similar in texture, and you may find that both sounds are more usable with a slightly shorter release time, and that they're further enhanced by a touch of reverb.

If you've been quick off the mark and got yourself a Poly 800II, these patches should work even better, though note that quite a few parameters have had their numbers altered in the change-over between Mks I and II.

Wonder who'll be first in with a patch for the new machine... ■

PROG No.	PROGRAM NAME	DCO 1 OCTAVE	DCO 1 WAVEFORM	DCO 1 16'	DCO 1 8'	DCO 1 4'	DCO 1 2'	DCO 1 LEVEL	MODE DCO	DCO 2 OCTAVE	DCO 2 WAVEFORM	DCO 2 16'	DCO 2 8'	DCO 2 4'	DCO 2 2'	DCO 2 LEVEL	DCO 2 INTERVAL	DCO 2 DETUNE	NOISE LEVEL	VCF CUTOFF	VCF RESONANCE	VCF KBD TRACK	VCF POLARITY	VCF EG INT	CHORUS ON/OFF	DEG 1 TRIGGER	DEG 1 ATTACK	DEG 1 DECAY	DEG 1 BREAK P	DEG 1 SLOPE	DEG 1 SUSTAIN	DEG 1 RELEASE	DEG 2 ATTACK	DEG 2 DECAY	DEG 2 BREAK P	DEG 2 SLOPE	DEG 2 SUSTAIN	DEG 2 RELEASE	DEG 3 ATTACK	DEG 3 DECAY	DEG 3 BREAK P	DEG 3 SLOPE	DEG 3 SUSTAIN	DEG 3 RELEASE	MG FREQ	MG DELAY	MG DCO	MG VCF	MIDI RCV CH.	MIDI PROG. CHANGE	MIDI SEQ. CLK
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
1	Jazz – Hammond Organ	3	1	1	0	0	1	31	2	3	2	0	0	0	1	31	7	1	0	55	10	1	1	1	1	1	0	25	24	31	16	10	0	25	24	31	16	10	0	22	30	25	9	1	0	0	0	–	–	–
2	Jazz – Hammond Organ Tremolo	3	1	1	0	0	1	31	2	3	2	0	0	0	1	31	7	1	0	55	10	1	1	1	1	1	0	25	24	31	16	10	0	25	24	31	16	10	0	22	30	25	9	1	8	0	1	–	–	–
3	Jazz – Organ Soft	2	2	0	1	0	0	31	2	3	1	0	0	1	0	31	12	3	0	37	7	2	2	1	1	1	5	31	31	31	31	18	5	31	31	31	31	22	0	15	16	16	14	8	1	0	1	0	–	–	–
4	Plaintive Flute / Organ	2	2	0	1	0	0	31	2	3	1	0	0	1	0	31	12	3	0	31	7	2	2	0	2	1	9	31	31	31	31	15	9	31	31	31	31	15	0	15	16	16	14	8	0	0	1	0	–	–	–
5	Double Bass	2	2	1	1	0	0	31	1								0	1	0	33	5	1	2	0	1	0	0	19	20	24	0	20							0	22	30	25	10	1	0	0	0	0	–	–	–
6	'Greek' Flute	3	1	0	1	0	0	31	2	3	2	0	0	0	1	31	0	1	2	43	3	0	2	3	2	0	8	10	31	31	30	17	2	10	12	0	0	9	0	15	16	16	14	8	8	5	0	0	–	–	–
7	Glockenspiel	2	1	0	0	0	1	31	1								0	1	3	45	0	0	2	1	2	0	0	21	22	23	0	26							0	0	0	0	0	0	0	0	0	0	–	–	–
8	Harp	1	1	0	0	0	1	31	1								0	1	3	45	0	0	2	1	2	0	0	21	17	27	0	24							0	0	0	0	0	0	0	0	0	0	–	–	–

Casio CZ101/1000
Lazer Guitar
Tim Dickerson
(No address supplied)

Patchwork receives more sounds for the budget Casio than any other synth these days – but keep them coming! 'Lazer Guitar' works well for both bass and lead lines, yet also serves as a good building block for creating further sounds – attention to the envelope curve should bring rich rewards. Note also that a different effect is obtained by varying the time over which the keys remain depressed. Anyway, as soon as Tim lets us have his address, the wheels of industry will start turning on his free sub... ■

PARAMETER

LINE SELECT (1+2, 1+2, 1+1)	MODULATION RING (ON/OFF)	MODULATION NOISE	DETUNE +/- (+/-)	DETUNE OCTAVE (0–3)	DETUNE NOTE (0–11)	DETUNE FINE (0–60)	VIBRATO WAVE (1–4)	VIBRATO DELAY (0–99)	VIBRATO RATE (0–99)	VIBRATO DEPTH (0–99)	OCTAVE +/- (+/–)	OCTAVE RANGE (0–1)
1+2	ON		+	01	–	–	–	–	–	–	±	0

1

DCO 1

WAVE FORM FIRST (1–8)	WAVE FORM SECOND (0–8)
4	1

E N V (PITCH)

STEP	1	2	3	4	5	6	7	8	
RATE	INITIALIZED								(0–99)
LEVEL									(0–99)
SUS/END									

DCW 1

KEY FOLLOW (0–9)
2

E N V (WAVE)

STEP	1	2	3	4	5	6	7	8	
RATE	82	50	33	25	50				(0–99)
LEVEL	57	99	85	00	00				(0–99)
SUS/END			SUS		END				

DCA 1

KEY FOLLOW (0–9)
3

E N V (AMP)

STEP	1	2	3	4	5	6	7	8	
RATE	80	20	32	20					(0–99)
LEVEL	99	53	15	00					(0–99)
SUS/END	SUS			END					

2

DCO 2

WAVE FORM FIRST (1–8)	WAVE FORM SECOND (0–8)
2	3

E N V (PITCH)

STEP	1	2	3	4	5	6	7	8	
RATE	INITIALIZED								(0–99)
LEVEL									(0–99)
SUS/END									

DCW 2

KEY FOLLOW (0–9)
0

E N V (WAVE)

STEP	1	2	3	4	5	6	7	8	
RATE	INITIALIZED								(0–99)
LEVEL									(0–99)
SUS/END									

DCA 2

KEY FOLLOW (0–9)
1

E N V (AMP)

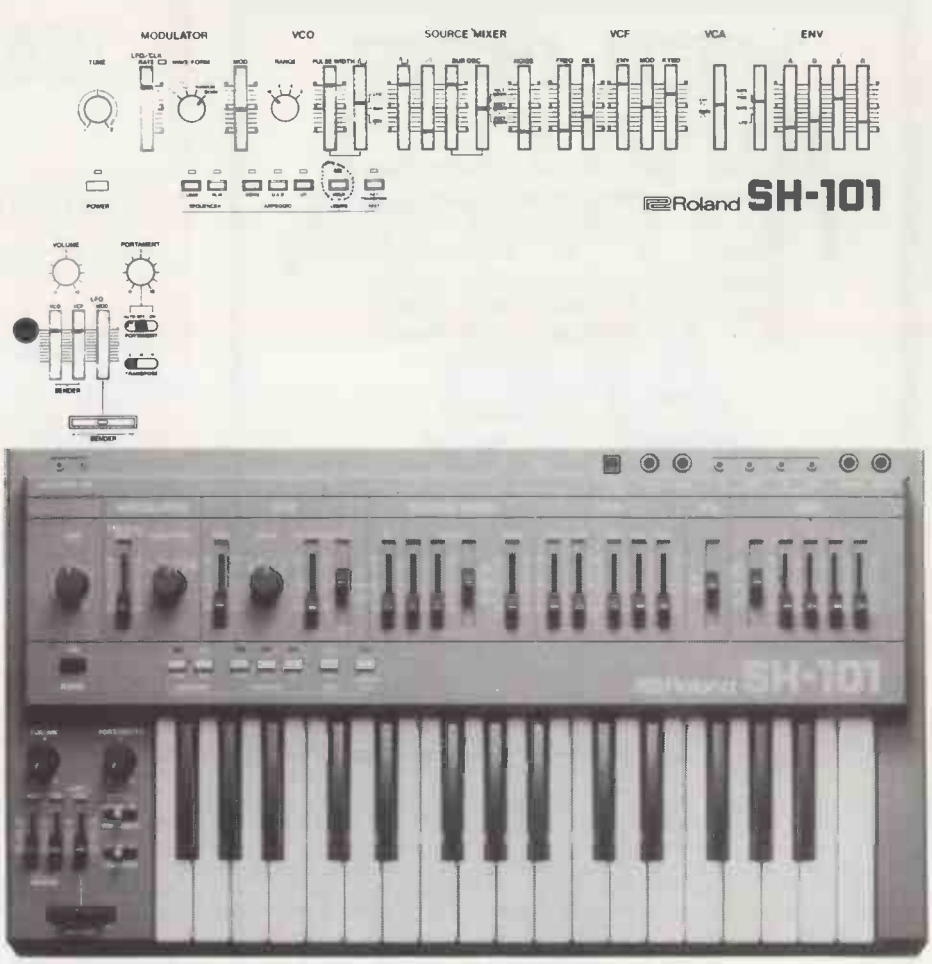
STEP	1	2	3	4	5	6	7	8	
RATE	99	35							(0–99)
LEVEL	99	00							(0–99)
SUS/END	SUS	END							

Roland SH101
633 Squadron
Neil Jones, London

Neil had the foresight to submit his sound on a short audio cassette (great idea, that), which is just as well. See what you make of this, his written description:

'Imagine the scene. A cold November night . . . a bomber's moon . . . perfect. Kenneth More, Richard Todd and John Mills take off into the night sky. The throb of engines, the smell of the cordite. They drop their deadly cargo, shake hands, and turn for home. "Good show old boy", says Richard. "I thought we'd bought it for a moment." "Pity about Ginger and Roger. Dashed bad luck, the tail falling off like that." "I wonder if I can have their tea ration...?"'

Yes, you've guessed. '633 Squadron' simulates the throbbing of a plane's engine interspersed with bombs dropping – an effect made even more dramatic by using the Bender. Not likely to appear on the next smash hit (though maybe the Sputniks will use it one day), but it's nice to know sound synthesis still retains an element of fun for some. Well done, Neil. ■



Yamaha DX100/27
Rich Chord
Carl Chamberlain, Bournemouth

We thought it was about time the DX7 gave way to another member of its illustrious family, so here's a patch for the baby DXs.

'Rich Chord' is an amalgamation of organ and piano with just a touch of gritty synth, and as such could serve a multitude of musical purposes. That said, it carries the air of being 'almost great', and FM enthusiasts will no doubt dissect it in the interests of further experimentation. But then, that's what Patchwork is all about. ■

ALGORITHM	FEEDBACK	LFO WAVE	LFO SPEED	LFO DELAY	LFO PMD	LFO AMD	LFO SYNC	MOD SENS PITCH	MOD SENS AMPLITUDE	MOD SENS EG BIAS	KEY VELOCITY
1	0	Triangle	35	0	3	23	Off	6	1	0	0
1	2	3	4	5	6	7	8	9	10	11	12

OP	AME		
4	1	0	0
3	0	0	0
2	0	0	0
1	0	0	0

OP	FREQ RATIO	DETUNE	AR	DIR	DIL	D2R	RR	OUT LEVEL	RATE SCALING	LEVEL SCALING	TRANSPOSE
4	4.00	+3	31	31	15	0	6	61	0	0	C3
3	1.00	+1	31	31	15	0	6	73	0	0	
2	1.00	-3	31	31	15	0	6	72	0	44	
1	1.00	+3	17	22	14	2	5	93	0	3	
	OSCILLATOR		ENVELOPE GENERATOR					OPERATOR	KEYBOARD SCALING		

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	12	Full T Porta	0	Sus	50	0	0	0	50	0

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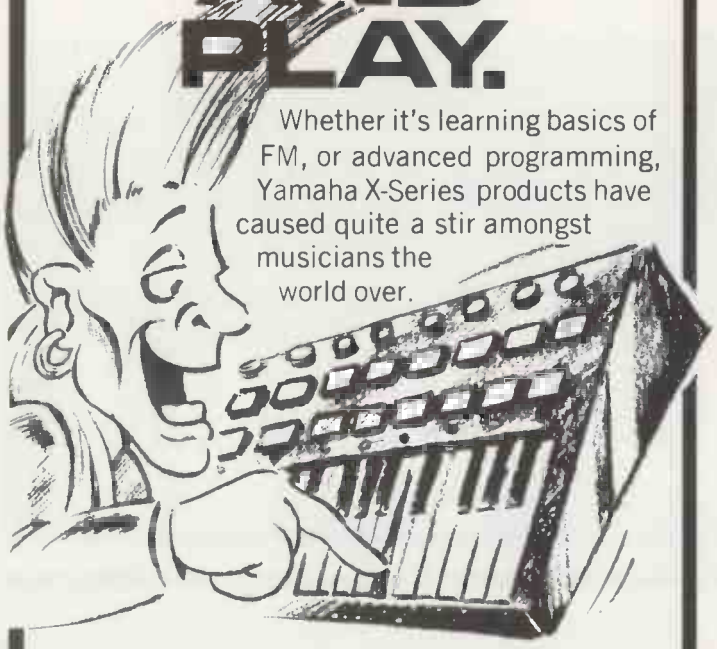

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▲ UP AND RUNNING

sophie and peter johnston

▲ In limbo between first demo tape and first gold disc, Sophie and Peter Johnston are reeling from blows dealt them by an uncaring UK record industry. Now they're releasing their sophisticated electro-pop on their own label. ▲ Interview *Annabel Scott* ▲ Photography *Matthew Vosburgh*

'Smash The Majors' is a fairly provocative name for an independent label. But then, Pete Johnston is in a provocative mood these days. Since the beginning of his musical career he's recorded at home and in professional studios, played for John Peel and grappled with various management companies, major labels and assorted distributors. Now that he and sister Sophie have decided to go it alone, he'd like to take an uncompromising line. But, as he's found to his cost, sometimes you just can't avoid compromise.

Musically, this duo write, arrange and perform electro-pop with a luxurious, sophisticated edge – a bit like Judie Tzuke meets Depeche Mode, if you can imagine that. It's an appealing combination, cleverly crafted, and sufficiently well sung and played to earn brother and sister plenty of interest from the big guns of Britain's music industry. More of that anon.

The end of the duo's tale (for the present) is a single on 'Smash The Majors' called 'Losing You'. But the beginning of the tale is around the time Pete and Sophie made Tape Of The Month in E&MM's old Cassette Review page, as far back as October 1982. At that time they'd finished just two songs, 'Travel In Time' and 'Paradise', in an eight-track studio in Newcastle. Pete takes up the story.

'Those tracks used a Roland SH09, an RS09 and a Soundmaster SR88 drum machine, and they were some of the first we'd done using ►

synthesisers. I formed a band after leaving University but we had too many adverse comments on the vocals, so since Sophie was still in school at the time, she was on the scene. I asked her to try some singing and the two of us eventually decided to concentrate on writing and recording together, because some of the band's live performances hadn't been too good.

'We sent out a lot of guitar-based tapes and got a lot of rejections. At the time we were very into different chords because all the punks were playing E-shaped bar chords and I wanted to stretch my fingers more. But all our drum and bass parts tended to be added as afterthoughts, and I think they were too melodic, not solid enough.

'Eventually we went into a local studio to record some songs, and a friend lent us some keyboards to mess around with. We took one of the guitar songs and found a sort of LFO pulse effect to back it, which seemed to be quite in tune with what was happening in the charts. By the time we'd finished, we decided that the synthesiser versions were a great improvement.'

Sophie: 'The owner of the studio heard one song, 'TV Satellite', and gave us some studio time to demo more songs. We signed a publishing deal with him, and at one stage we thought Dollar were going to record one of our songs.'

Then, just as things seemed to be taking off, the duo took a step that's involved them in financial, legal and contractual problems almost up to the present day. Managed by the Newcastle studio's engineer, they signed to an independent label who paid for them to record a song in a large London studio.

'The recording went disastrously wrong. The studio wasn't very enthusiastic, their plate reverb had packed in, and after the record company took the song to MIDEM with no success, they wouldn't let us remix or re-record it.'

There were compensations, though. 'At that stage we quite independently sent some tapes to Peter Powell, and as an afterthought to John Peel. Three days later we had a call from Peel's producer asking us to do a session, and we recorded three old songs, 'Satellite TV', 'Paradise' and 'Rain', and wrote a fourth one called 'One Face'. Our parents lent us the money to buy some new equipment – an MC4 MicroComposer, three Pro Ones, an SH09 and a TR808 drum machine. We were partly influenced by the sort of fat synthesiser sounds Yazoo were getting then.'

Sophie: 'We'd stretched the equipment we had to the limit by that time. We were chopping up the string sound of the RS09 with the synthesiser and pulsing it in time to the drum machine, but the MC4 allowed us to do so much more preparation in advance.'

Partly because of that advance preparation, the duo's Peel session was a great success. As Pete explains, 'it went like a dream; the guys were enthusiastic and didn't mind going on until about five in the morning. We did an SSL mixdown and when Peel played the session he said all sorts of nice things about it. He obviously liked the songs and a lot of companies contacted the Beeb and were passed on to our manager. But our label had us tied up – they suddenly announced that they were coming to see us, and I was annoyed by their change of attitude. Unfortunately we fell out with the manager on that one, which was a great pity...'

"To emphasise the home recording element of the single, we left a lot of silly sound effects on it...Simon Bates' producer said it was the best home effort he'd heard."

It was roughly at this point that Pete and Sophie began their love/hate relationship with the major labels. They recorded three more songs and met representatives from Polydor, WEA and Chrysalis, who eventually signed them. But on examining the contract, the hapless duo found most of the £60,000 advance had gone to their previous company, a fact which became the cue for eight months of legal arguments. As Sophie recalls, 'our manager had no experience at all at this level, and we were much too depressed by the business side even to write any new songs. After eight months, Chrysalis lost a lot of their enthusiasm.'

The duo compromised and came out of the deal with enough money to buy a Jupiter 8 and a Movement Drum Computer – the latter a decision Pete describes as 'a big mistake'.

'We were influenced by the Eurythmics and the Thompson Twins using the Movement, so we went for it even though it was around £2300. But the manual was so obscure that by October '83, when we did a second Peel session, we still couldn't synchronise the

drums properly. It did work, but it just didn't tell you in the manual how to *make* it work.

'We did three songs for Peel, 'Open Eyes', 'Words and Words' and 'Travel In Time', which was much older, but we were trying to update older songs because we hadn't the motivation to write new ones.

'Chrysalis were very courteous. They hired vans for us to move the gear about and we were dealing with them direct most of the time. Then they said they were looking for a producer for our songs and that they'd been talking to Martin Rushent, Swain and Jolley and all sorts of people.'

The next twist in the Pete and Sophie saga seems unbelievable – yet the pressures of dealing with major record labels do tend to create unusual situations. Let Pete tell it in his own words...

'Around that time my girlfriend Claire, who now acts as our PR, moved down to London to teach, so I came to join her. We were getting very little encouragement or guidance, and we had three songs which we'd have liked to put out as singles but Chrysalis wouldn't use them. Then Sade's producer Robin Millar was suggested. I'd read in an interview that he hated synthesisers, so I didn't see him as being right and I wouldn't go to meet him.'

This was the last straw for Chrysalis. A studio session was booked but eventually cancelled, and the duo had a phone call to say they'd been released from their contract.

'By November '84 we'd had a lot of frustration and a few good demos, but we'd lost a lot of illusions about the business. We started looking around for good management, which we'd decided was vital by that stage, but we were too unsure of ourselves to trust anybody. The end of the money from Chrysalis was just enough to buy us a Fostex eight-track system with some outboards, but we only had that for about a month before an enormous tax bill took it away.'

Tough as it was, that month in mid-'85 was a pretty creative one for the duo, and led to the formation of their own label and the release of 'Losing You'. Pete explains.

'We had to write new songs because we couldn't afford to buy back the old ones. I wanted a big sound, something good enough for broadcast, and decided the way to do it was through the outboards. We bought a Roland SDE3000 digital delay with an SX303 sampling add-on, a Vesta Fire DIG410, a DeltaLab delay, a Yamaha R1000 digital reverb, Drawmer gates and a Yamaha GC2020 compressor, and I used a Marantz hi-fi graphic.'

The Johnstons' first song started life as a jingle entered for a TDK competition in *Home & Studio Recording*, and made imaginative use of the SX303 sampler. 'We couldn't use it for musical effects because it didn't track reliably enough, but we used some telephone noises, sampled sounds, tin cans and so on. Then for the A-side we multitracked chords on the Jupiter 8 and bounced them together for a very thick sound.

'The only drum machine we had was a Drumatix, so we sampled bass and snare sounds from various demo records and kept just the Drumatix cymbals synced from the MC4's timecode. Sophie started singing in the next room, but she couldn't pitch properly using a cheap mic, so we bought a Sennheiser. After that we got the vocal down in sections over a period of a couple of days, but we had to solve the problems of knocking the mic, cars going past and so on.

'We put most of the effects on the instruments as they were recorded, even complex ones like chorused reverb, because the overdubs were so complex. That did simplify the mix, and an Aphex Aural Exciter helped to liven up the drum sound. Although we weren't entirely happy with the cut, a DJ in Newcastle said it would be OK for airplay.'

"The gap between the song and the listener is too great...I don't think people would buy records if they knew how much money was being spent to break each act."

And played it was, first by John Peel, then by Simon Bates on his daytime show and then by a couple of Radio 2 shows.

'We'd decided to sell the single by mail order and sent out 200 out of 1000 copies to all the BBC and independent local radio stations, with individual letters to the DJs. We were told we wouldn't get any interest at all without a £1000-a-week plugger working for us, but in fact Simon Bates was interested enough to do a phone interview with us on the air. He asked about the label name, but because I found him a bit intimidating I backed out of explaining that one.'

Pete and Sophie have learned a lot from the production of 'Losing You'. They worked through a music brokerage service called MIS, but realised, in retrospect, that direct access to the cutting, pressing and printing facilities would have been advantageous. The first cut was poor and had to be repeated, and it wasn't until the duo went to Tape One (where the third cut was actually checked before delivery) that they were satisfied.

After the usual delays, the singles arrived and the duo placed adverts in the music press which started to sell copies gradually.

'We wanted to emphasise the home recording element of the single, which is why we left a lot of silly sound effects on the B-side which any major would have taken off. Simon Bates' producer phoned to say it was the best home effort he'd heard, and we sold a lot of copies through some plays on the Janice Long show.

'MIS heard it on the radio and we entered into a non-exclusive distribution deal with them through EMI, but it doesn't seem to have got the single into many shops, even though it's been on all the new release lists. Taking distributors' mark-ups and postage into account, we need to sell almost all 1000 copies to break even.'

So it's not yet all sweetness and light for Smash The Majors. Another tax bill put paid to Pete's Jupiter 8, though he's kept the MC4 which had been connected to it through an OP8 interface, because many of his old songs are stored as MC4 sequence files. He now has a Casio CZ101 and SZ1 sequencer, a combination with which he's delighted.

'When I'm writing now I can put synth sounds and drums onto cassette and try various overdubs, and the Phase Distortion system on the Casio gives you access to most of the FM digital sounds as well as all the analogue effects. I think it sounds as good as the Jupiter 8, particularly in the four-note poly mode for thicker sounds. I've used a DX7 but it's not as good for rich chorus sounds.'

And what of the future?

'At the moment we'd like to see how far we can get as an independent label, perhaps just recording on a Portastudio. We did have an offer of a percentage deal for 24-track time which is very tempting, but on the whole we feel the gap between the song and the listener is too great now. I honestly don't think people would buy records if they knew how much money was being spent to break a new act.

'We'd like to help create a situation in which anyone who writes a good song can get a hit with it. Most of the songs in the charts these days are very formularised – love and life aren't that simple. The sentiments expressed in 'Losing You' are, we think, a more accurate reflection of the real world.' ■

'Losing You'/'60 Second Blow' *costs £1.20 including p&p from Smash The Majors, PO Box 786, London SE11 6QW. Cheques/POs should be made payable to S & P Johnston*

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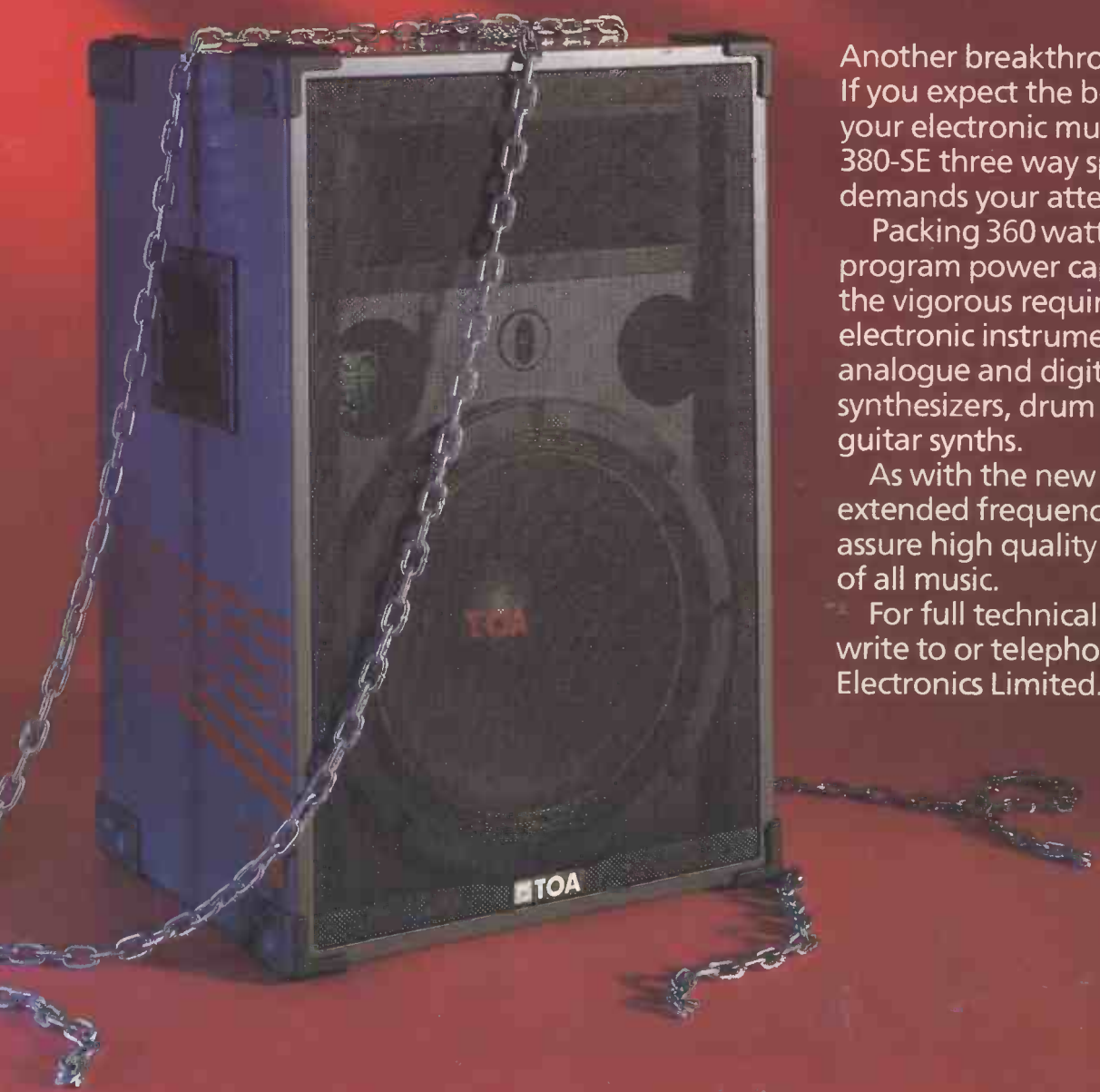

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